THE TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING SYSTEM IN BOTSWANA:
STAKEHOLDER PERCEPTIONS OF TVET PRACTICES

BY

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AUSTRALIA

MARCH 2015
STATEMENT OF ORIGINALITY

I hereby certify that the contents of this thesis relate to my own work, taking into account normal candidate-supervisor relations. The thesis contains no materials which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to the final version of my thesis being made available worldwide when deposited in the University’s Digital Repository, subject to the provisions of the Copyright Act 1968.

.................................................................

Lydia Ngati
March, 2015
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**ABSTRACT**

Poor quality TVET provision in Botswana has prompted the government to attempt to revitalise the system. The country’s two educational reviews in 1976 and 1993 have been very instrumental in guiding the overall education and training provision in Botswana. These reviews saw the establishment of the country’s first National Policy on Vocational Education and Training in 1997, and the Botswana National Qualifications Framework (BNQF) and the Botswana Training Authority (BOTA) in 2000 to ensure quality and raise standards by harmonising existing training provision.

This study focused on stakeholder perceptions of current TVET practice since the inception of NPVET (1997) and Revised National Policy on Education (1994) and the challenges brought about by these changes. Quantitative and qualitative methods of inquiry were used to collect data from stakeholders. For the quantitative part of this study, surveys were used to collect data from TVET Learners, TVET Lecturers in the sampled eight Government TVET institutions (4 Technical Colleges and 4 Brigades) and Employer groups in Botswana. For the qualitative part, interviews were held with Government officials. The SPSS software package was used to analyse quantitative data while NVivo was used for qualitative analysis.

Findings from this study point to many variables that hinder the system’s relative effectiveness. Some of these included fragmentation of the current TVET system in Botswana, minimal stakeholder involvement, limited resources for effective delivery of TVET programs, and inadequate instructional methods. Another important finding was that TVET Learners in the Brigades felt disadvantaged in terms of resources compared to their counterparts in Technical Colleges. Moreover, recognition of TVET qualifications and progression pathways within Government TVET has proven difficult. Thus, the study concluded that a holistic approach was needed involving all key stakeholders in formulation and implementation of policies and programs to address the short, medium and long term measures to improve the TVET system’s effectiveness in Botswana.
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LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA Analysis of Variance
AU African Union
BDP Botswana Democratic Party
BOTA Botswana Training Authority
BTEP Botswana Technical Education Program
BEC Botswana Examination Council
BNQF Botswana National Qualifications Framework
BNVQF Botswana National Vocational Qualifications Framework
BGCSE Botswana General Certificate of Secondary Education
CBT Competence Based Training
COSC Cambridge Overseas School Certificate
DoE Department of Education
DoL Department of Labour
EWP Education with Production
DTVET Department of Technical and Vocational Education and Training
FCTVE Francistown College of Technical and Vocational Education and Training
GTC Gaborone Technical College
HREC Human Research Ethics Committee
ICT Information, Communication and Technology
IIEP International Institute for Education and Planning
ILO International Labour Organisation
JC Junior Certificate
MTTC Madirelo Training and Testing Centre
MoE & SD Ministry of Education and Skills Development
MoLHA Ministry of Labour and Home Affairs
MTC Maun Technical College
NBCC National Brigade Coordinating Committee
NCC National Craft Certificate
NDP National Development Plans
NPVET National Policy on Vocational Education and Training
NCoE National Commission on Education
NCVT National Certificate of Vocational Training
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>NQF</td>
<td>National Qualifications Framework</td>
</tr>
<tr>
<td>NSA</td>
<td>National Skills Authority</td>
</tr>
<tr>
<td>OBE</td>
<td>Outcomes Based Education</td>
</tr>
<tr>
<td>PTC</td>
<td>Palapye Technical College</td>
</tr>
<tr>
<td>PSLE</td>
<td>Primary School Leaving Examination</td>
</tr>
<tr>
<td>QAA</td>
<td>Quality Assessment and Assurance</td>
</tr>
<tr>
<td>RPL</td>
<td>Recognition of Prior Learning</td>
</tr>
<tr>
<td>SA/RSA</td>
<td>Republic of South Africa</td>
</tr>
<tr>
<td>SADC</td>
<td>Southern African Development Community</td>
</tr>
<tr>
<td>SAQA</td>
<td>South African Qualifications Authority</td>
</tr>
<tr>
<td>SETA</td>
<td>Sectoral Education and Training Authorities</td>
</tr>
<tr>
<td>SQA</td>
<td>Scottish Qualification Authority</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Program for Social Sciences</td>
</tr>
<tr>
<td>TVSD</td>
<td>Technical &amp; Vocational Skills Development</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organisation</td>
</tr>
<tr>
<td>VT</td>
<td>Vocational Training</td>
</tr>
</tbody>
</table>
DEFINITION OF TERMS

**Apprenticeship**
A form of training system which combines on-the-job training and work experience while in paid employment with formal off-the-job training. An apprentice/trainee enters into a training agreement with an employer which outlines commitment from both parties.

**Assessment (of skills and competences)**
These are exercises employed to evaluate or measure level of competence achieved after or during training.

**Awarding body**
An organisation responsible for issuing qualifications (Certificates, Diplomas or Degrees) as recognition of individual competence and achievements following a standard assessment procedure.

**Batswana**
Citizens of Republic of Botswana (Singular: Motswana)

**Best practice**
Management practices and work processes that lead to quality performance and strive to lead by examples.

**Brigades**
Community-based training centres which combined training with practical work and enterprise activities which were famous for offering out-of-school and post-school TVET.

**Competence**
An ability to perform given task at the acceptable standards, i.e. the possession of knowledge, skills and personal characteristics needed to satisfy the special demands or requirements of a particular situation.

**Competency standard**
1. An industry-determined specified set of skills, knowledge and attitudes required to operate effectively in an employment setting. They are comprised of unit specifications, which are made up of learning outcomes, together with performance criteria against a range of variables.

2. Statement developed by industry specifying the competencies required by workers for each sector of the workforce.

**Employability**
1. The degree of readiness an individual demonstrates in finding and securing a job.
2. Relates to portable competencies and qualifications that enhance an individual’s capacity to make use of the education and training opportunities available in order to secure and retain decent work.

**Employability skills**
The skills which enable people to gain, keep and progress within employment, including skills in the clusters of work readiness and work habits, interpersonal skills and learning, thinking and adaptability skills.

**Flexible delivery**
A range of approaches to providing education and training, giving learners greater choice of when, where and how they learn. Flexible delivery may include distance education, mixed-mode delivery, online education, self-paced learning, self-directed learning.

**Information and communication technology (ICT)**
Technology that provides for the electronic input, storage, retrieval, processing, transmission and dissemination of information.

**Key competency**
Any of several generic skills or competencies considered essential for people to participate effectively in the workforce. Key competencies apply to work generally, rather than being specific to work in a particular occupation or industry.

**Knowledge economy**
An economy that is driven by ideas and knowledge, rather than by material resources, and in which the keys to job creation and higher standards of living are innovation and technology embedded in services and manufactured products. (Source: ILO)

**Labour market**
The system of relationships between the supply of people available for employment and the available jobs.

**Lifelong learning**
All learning activity undertaken throughout life, with the aim of improving knowledge, skills and/or qualifications for personal, social and/or professional reasons.

**Modular training**
The breaking down of whole educational qualifications into useful sub-units (modules) each of which has measurable outcomes that are assessed (and in some cases certified) in their own right as well as contributing to a larger overall educational outcome (primarily a qualification).

**On-the-job training**
Vocational training given in the normal work situation; it may constitute the whole training or be combined with off-the-job training.

**Pathway of training**
Various combinations of education, training and employment activities that individuals may undertake to reach a certain destination, for example a desired qualification or type of employment.
Qualifications framework
A structure for setting out the levels at which vocational qualifications accredited by regulatory authorities can be recognized.

Skill
An ability to perform a particular mental or physical activity that may be developed by training or practice.

Skill development
The development of skills or competencies that are relevant to the workforce.

Skill shortage
Shortage of a particular skill in the labour market.

Skill upgrading
Training to provide supplementary and generally higher-grade qualifications and knowledge within the same trade or profession to enable the trainee to better his/her work situation and eventually to make themselves eligible for promotion.

Sustainable development
Development that meets present needs, without compromising the ability of future generations to meet their own needs.

Technical and vocational education and training (TVET)
Post-compulsory education and training, excluding degree and higher level programmes delivered by higher education institutions, which provide people with occupational or work-related knowledge and skills.

Vision 2016
A statement of intent that identifies key policy directions in anticipation of Botswana’s 50 years of independence.

NDP
These are propositions that are debated in parliament to identify emerging social and economic key areas and challenges. They are usually for a period of five years.
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CHAPTER 1: INTRODUCTION TO THE STUDY

1: Introduction

Chapter 1 introduces the study. It gives a brief history of Botswana, describes the development of education after the country’s independence in 1966 and discusses the overall TVET system in Botswana. The chapter provides the motivation for the study, its problem statement, purpose, objectives and significance before giving an overview of subsequent chapters.

1.1: Botswana in context

The Republic of Botswana is a former British colony situated in Sub-Saharan Africa. The country is landlocked and surrounded by countries like South Africa, Namibia, Zimbabwe and Zambia. Botswana estimates the population to be approximately 2.1 million (Makgapha, 2011, October 05). Its capital city is Gaborone. The official languages are Setswana and English. It is democratically ruled and a multi-party state. Presently the Botswana Democratic Party (BDP) is in power. BDP has ruled the country since independence in 1966.

Botswana has excelled in economic and social development in Sub-Saharan Africa since independence in 1966 (Akoojee, 2005; Botswana-Federation-of-Trade-Unions, 2007) through its wealth in mineral resources and beef exports. The government maps its economic proposals through a number of National Development Plans (NDPs). These NDPs are propositions that are debated in parliament to identify emerging social and economic key areas and challenges (Republic-of-Botswana, 2001). They are usually for a period of five years with the current NDP being linked to the country’s Vision 2016 strategic plan (Akoojee, 2005; Republic-of-Botswana, 2001). Vision 2016 is a statement of intent that identifies key policy directions in anticipation of Botswana’s 50 years of independence.

1.2: History of Education in Botswana

Botswana is praised for having sound policy documents that have guided the development of education since the country’s independence in 1966 (African-Union, 2007; Simon McGrath et al., 2006; S. McGrath et al., 2006; World-Bank, 2001). The major policy
documents across all sectors of education, their years of implementation as well as their mandate and significance are listed in Table 1.1 below for ease of reference. Reference to these documents will be made throughout this study.

**Table 1.1: Government policies and directives guiding the Botswana Technical and Vocational Education and Training system**

<table>
<thead>
<tr>
<th>Policy</th>
<th>Abbreviation</th>
<th>Year</th>
<th>Mandate/significance</th>
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<tbody>
<tr>
<td>National Commission on Education</td>
<td>NCoE</td>
<td>1976</td>
<td>Adopted as Government white paper No. 2 and passed as Education Policy referred to as Education for Kagisano in 1977. It was to formulate the country’s philosophy of education, setting goals for the development of education and training, and recommending the best strategies to achieve those goals, (Republic of Botswana, 1977, p. 1).</td>
</tr>
<tr>
<td>Report of the National Commission on Education</td>
<td>RNCE</td>
<td>1993</td>
<td>Passed on as Government paper No. 2 in 1994 as the Revised National Policy on Education, it was to identify the goal of education as preparing Batswana for the transition from a traditional agri-based economy to an industrial economy that would be able to compete with other countries of the world.</td>
</tr>
<tr>
<td>Vision 2016</td>
<td></td>
<td>1996</td>
<td>A statement of intent that identifies key policy directions in anticipation of Botswana’s 50 years of independence. It envisaged the country to be An Informed and Educated nation by 2016.</td>
</tr>
<tr>
<td>Vocational Training Act</td>
<td>VET Act</td>
<td>1998</td>
<td>An Act to provide for the integration and promotion of vocational training and for matters connected or incidental thereto, (Republic of Botswana, 1998, p. 3)</td>
</tr>
<tr>
<td>Botswana National Qualifications Framework</td>
<td>BNQF</td>
<td>1998</td>
<td>To provide the basis for accreditation and determination of equivalencies of vocational qualifications, which framework shall be linked to any other qualification and accreditation within the overall qualification framework of the education system in Botswana, (Republic of Botswana, 1998, p. 9).</td>
</tr>
<tr>
<td>Botswana Training Authority</td>
<td>BOTA</td>
<td>2000</td>
<td>(a) Coordination of vocational training activities in order to achieve better integration and harmonisation of the vocational training system being developed; (b) Monitoring and evaluation of the performance of the vocational training system being developed in order to ensure the successful performance of all training activities; and (c) Advising on policy related issues of vocational training (Republic of Botswana, 1998, p. 4).</td>
</tr>
</tbody>
</table>

Like many countries, Botswana has a spectrum of education sectors ranging through early childhood, primary and secondary, Technical and Vocational Education and Training (TVET) and higher education. In Botswana, TVET encompasses the development of skills and related underpinning knowledge in the population, allowing qualification as tradespersons, technicians and other skilled worker categories in meeting the needs of the
rapidly developing Botswana economy. With this study primarily focussing on TVET, discussions about other sectors of education will be limited.

The first National Commission on Education (NCoE) in 1976, adopted as a government policy document in 1977 (*Education for Kagisano*) observed dramatic growth in the country’s education since independence in 1966 (Republic-of-Botswana, 1977). It was then to “formulate the country’s philosophy of education, setting goals for the development of education and training, and recommending the best strategies to achieve those goals” (p.1). NCoE called for restructuring of the 7-3-2 system (seven years in primary education, three years in junior and two years in senior secondary schools) (Republic-of-Botswana, 1977, 1994; Tabulawa, 2009; Tau & Modesto, 2010), to a 7-2-3 system with a view to expanding basic education from seven to nine years but this was returned to a 7-3-2 system (Republic-of-Botswana, 1994) by another education review in 1993. The expansion from nine to ten years exerted financial pressure on the government and raised concerns about the quality of education. At that time, the resources were not adequate to accommodate the expansion. It was then recommended that other opportunities for provision of learning out-of-school and post-school be explored. Since 1994 the Revised National Policy on Education, RNPE (1994) has been directing the strategy for providing quality education and training in the country (Republic-of-Botswana, 1994).

Innovations in Botswana’s education system since the implementation of RNPE by different education departments are noticeable. Examples include; re-structuring of the Ministry of Education to form Ministry of Education and Skills Development; expansion and decentralisation of primary education departments for effective management & supervision; the introduction of the localised curriculum in secondary schools; and the establishment of Botswana Examination Council (BEC). The BEC was established to administer all forms of testing and certificates for the Ministry of Education & Skills Development to take over from the British Cambridge Overseas School Certificate (COSC) (Tabulawa, 2009; Tau & Modesto, 2010). The Botswana Examination Council was implemented at the same time as the introduction of a localised curriculum in Government schools. Until the late 1990’s Botswana senior secondary school students sat for Cambridge international examinations before local examinations were effected.
For this study, only developments within the country’s TVET system will be addressed as it is this educational sector which is the focus of the research.

1.3: Technical and Vocational Education and Training in Botswana

The policies of the former colonial powers influenced most developments in African TVET as newly independent nations built on forms of education established under the colonial system (Desert, 2008; McGrath, 2005). The low level of human capital Botswana inherited from the colonial era, coupled with rapid economic growth, forced the Botswana Government to heavily invest in education and training to skill its people (Desert, 2008). However, as in many African states, TVET in Botswana was neglected in favour of producing a workforce that could take over the white collar jobs from departing expatriates. The Botswana Brigades were the first TVET centres established in the 1960s. They were run and managed by the community and were famous for combining training with production (Akoojee, 2005; Desert, 2008; McGrath, 2005).

By 1976 the Botswana Brigades and the National Centre for Vocational Training (NCVT) offered out-of-school and post-school TVET. Republic-of-Botswana (1977) stated that training offered at that time was up to Trade Test C (a qualification within the National Vocational Awards level) “which was sufficient to meet the country’s needs for formally prepared workers at the first skill level” (p. 123). The other training centres were the Vocational Training Centres (now Technical Colleges) which were first established in 1987 (Desert, 2008; Mmolotsa, 2013). There were 30 brigades and 12 national centres for vocational training in existence. At the time, only a small percentage of Batswana (citizens of Botswana) graduated from these institutions. Mmolotsa (2013) characterised the different types of programs offered in these TVET institutions (Technical Colleges and Brigades) as “Madirelo Training and Testing Apprenticeship programs; Botswana National Vocational Qualifications Framework (BNVQF); Botswana Technical Education Programs (BTEP) and Franchised and self-developed ones” (p. 4).

With a national labour force lacking suitable skills threatening Botswana’s growing economy, the government had to invest in educating its people (Desert, 2008; Republic-of-Botswana, 1977; Sanyal, Kann, Varghese, & Camara, 1990). Priority was to be accorded to TVET courses as TVET was viewed as distinct from general education and
was seen as a vehicle for economic advancement and success. Mupimpila & Narayana (2009); SADC (2011) and European-Commision (2012) discuss the development of a skilled labour force and their importance in contribution to economic growth of a country thus reducing unemployment and poverty rates. With so much dependency on foreign expertise, there was an urgent need for educated and skilled locals to replace expatriates in the workforce.

McGrath (2005) indicates that TVET systems across Southern Africa in the 1990’s were less connected with labour market demand than they had been in the 1970s and 1980s. As a result, SADC countries found themselves being increasingly influenced and pressured by external actors with powerful views on how their TVET systems should reform (McGrath, 2005). Multilateral development agencies like ILO, World Bank, UNESCO, European Union, German Development Agencies among others have been very influential in TVET reforms in the Southern Africa region (African-Economic-Outlook, 2008; McGrath, 2005; Weiss, 2013). As African-Economic-Outlook (2008) put it, this impact happened years after independence for most states.

Africa was the second largest recipient of World Bank loans for education between the years 1963 and 1969 (Japan-International-Cooperation-Agency, 2007; Yamada & Matsuda, 2007). There was a shift from the 1990’s towards international development assistance which was aimed at promoting growth oriented approaches to rectifying and supporting regional disparities and reducing poverty. Japan-International-Cooperation-Agency (2007) indicated that:

> Since the 1990’s, partnerships amongst development actors such as between aid agencies and developing governments, between developing governments and civil society organisations (e.g. NGOs), or between aid agencies themselves, have been promoted and the concept of honouring the independent determination of policy by government (i.e. ownerships) has been shared widely within the international community (p. 13).

As further stated, financial assistance was provided on the condition that the aid agencies approved policy guidelines while implementation was to be left to recipient countries. Recipient countries had to convincingly demonstrate the need for their TVET systems to develop vocational human resource as a pre-requisite for financial support. The types of support offered by these aid agencies include providing technical support; advising and taking part in policy consultations to facilitate the construction of a framework for establishing policy and competency skills qualifications systems. In recognition of the
efforts by recipient countries to earn financial support as a condition for receiving aid, the World Bank’s approach to TVET was towards:

1) Promoting and improving quality TVET programs;
2) Encourage Governments to forge partnerships with the industry and private providers in curriculum development and delivery;
3) Clearly defining roles to be played by all stakeholders to harmonise TVET systems (Japan-International-Cooperation-Agency, 2007; McGrath, 2005).

Other international development organisations like the ILO and UNESCO had also shown interest in TVET policy issues in developing countries (Japan-International-Cooperation-Agency, 2007; McGrath, 2005). ILO focussed more on labour issues and advocating for efficiency and effectiveness in all TVET systems within the global economy. It emphasised that, to effectively develop human resource, certain mechanisms should be put in place. Japan-International-Cooperation-Agency (2007) listed these mechanisms as:

1) Setting standards for technical skills and developing a skill qualification system which corresponds to the standards, so as to enable employers to more objectively grasp the capabilities of workers;
2) Reinforce collaboration with the private sector;
3) Offer incentives to encourage the private sector to share burden of human resource training costs with the government (p. 15).

UNESCO on the other hand promoted expansion of education and training based on human rights (Tikly, 2013). Regarding TVET, UNESCO clearly highlighted promotion of lifelong learning for the sake of sustainable development. The three major development and aid agencies all advocate that governments focus on preparing guiding laws, regulations and frameworks for TVET while keeping their own implementation of training to minimum and utilising private training institutions for the rest. More discussion about these TVET theories (ILO & Neo-liberal and UNESCO & Human Development theory) will be presented in chapter 2.

However, donor assistance to African states was different. Some recipient countries were labelled as “important” between 1995 and 2006. These countries were Egypt; Senegal; Mauritania; Algeria; Morocco; Cote d’Ivoire; Zimbabwe; Chad; Eritrea; Togo; South Africa; Mozambique; Kenya; Angola and finally Rwanda (African-Economic-Outlook, 2008). In other countries, including Botswana, the donor support to technical and vocational skills development (TVSD) was channelled through:
The Sector-Wide-Approach (SWAP), which entails an integrated and inter-sectoral approach to education. The SWAP approach is based on a sectoral policy document and global strategic framework, the existence of a sector medium expenditure framework and of an annual budget...The key challenge in this regard is to develop recipient country capacity, especially bringing the planning process of different ministries under the single institutional umbrella and developing strength to negotiate with and manage donors (p. 3).

Botswana is classified as an upper middle-income country by international agencies such as the World Bank and many bilateral donors, and thus is believed to be in position to self-fund some of its TVET activities. Donor projects are reportedly often short-lived because they don’t include a sustainable funding strategy, they are not integrated in the local context, and they do not sufficiently involve local communities. This is apparently the case with some Botswana TVET programs. Although much has been written about donor assistance in African countries, there is limited literature about TVET reforms in these states, their success and projected future plans. The only available data is through policy documents from some of these Governments and organisations like Southern African Development Community and the UNESCO. Others are through international observers with limited knowledge and experience based on situations and developments prior to independence for most African states.

The activities of donor assistance/aid in Botswana TVET are evident through a number of projects. Examples of these projects include the up-grading and building of some of the training facilities like Gaborone Technical College and newly built Francistown College of Technical and Vocational Education through European Union funds; and the establishment of Botswana Technical Education Programs through assistance from the Scottish Qualifications Authority and Frameworks. Other forms of assistance were in the form of capacity building to train and up-grade the existing staff through different agencies. As much as Botswana is a recipient of the TVET aid, the extent to which it meets the needs of Batswana and its contribution to national economic and social development has not been documented. This study therefore intends to contribute to scholarly literature advocating for change and reforms in TVET systems which is more stakeholder driven thus contributing effectively to human resource development which will ultimately partake in the country’s development of social and national economic activities.
The TVET system has been criticised within Botswana since the 1970’s. It was deemed to be of poor quality, uneven and uncoordinated (Akoojee, 2005; Desert, 2008; Republic-of-Botswana, 1977, 1994, 1997b). The formation of Botswana Brigades in the 1960’s was aimed at providing secondary education to a select few who could not make it to secondary schools at an affordable cost (Desert, 2008; Republic-of-Botswana, 1977). Republic-of-Botswana (1977) stated that, the Brigades progressed into offering vocational education “through productive enterprise which covers a large part of the cost of training and generate resources as well as employment for the community” (p. 175).

Of continuing concern was the lack of TVET policy to guide the system as well as a lack of a coordinating body for certification and monitoring of the system (Akoojee, 2005; Republic-of-Botswana, 1994; Tau & Modesto, 2010). Such concerns led to recommendations which saw the establishment of the first National Policy on Technical and Vocational Education (NPVET) in 1997, the Vocational Training Act in 1998, BOTA in 2000 and the Botswana National Qualifications Framework in 2000 (refer to Table 1 on page 2) (African-Union, 2007; Akoojee, 2005; Basupang, 2007; Desert, 2008; Republic-of-Botswana, 1997b, 2001). NPVET was to uplift the status of TVET in skills training and provision for the country’s economic development (Republic of Botswana, 1997).

At present, TVET in Botswana is delivered by both public and private providers, with Government-funded training being prevalent. However, private sector provision seems to be on the increase (Akoojee, 2005; Desert, 2008; World-Bank, 2001). Training in these institutions varies in duration and the levels at which it is offered. Within the government sector, other Ministries have their own training facilities. The Ministry of Education is, however, the strategic overseer of overall TVET provision in the country (World-Bank, 2001). There is observable disparity, however, between government institutions and private providers in that some qualifications are awarded by institutions from outside Botswana (Tabulawa, 2009; Tau & Modesto, 2010).

Although there are noticeable efforts by the Botswana government and other stakeholders to revitalise the system, concerns exist over the current training provision. The level of TVET stakeholder consultation, extent of consensus reached and successes of such activities have attracted little scholarly attention. Currently, quality of training is often at
question. It should be noted that the reviews of 1976 and 1993 emphasise quality training in all forms of TVET. The 1993 review recommended raising standards for all the technician and trade test provision in Botswana Brigades and Vocational Training Centres (VTCs). The recommendations called for extended financial support of TVET, external administration and monitoring of all TVET centres, and for training courses to have criterion referenced assessment (Botswana-Federation-of-Trade-Unions, 2007; Republic-of-Botswana, 1977). With regards to certification and qualification, the 1993 review continued to support the Government motion tabled in 1976 on Brigades training. Republic-of-Botswana (1994) recommended that:

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There be two forms of certification, namely full certification for a completed National Vocational Awards level, and a modular certification, with completion of the appropriate set of modules giving entitlement to the full certificate (p. 31).
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This supports a platform for two forms of training by the TVET system in Botswana. With the NPVET calling for diversification of TVET curriculum to introduce modular and competency based programs alongside technician and trade training, Botswana Technical Education Programs (BTEP) (based on British general vocational qualifications) were introduced and launched in 2001. It was believed that the launch of BTEP would uplift the status of the system in the country and lead to a ‘modern TVET system’.

The Botswana Training Authority had conducted 3 studies in 2006 and 2011 respectively. Their reports were focussed on two different issues:

1) Two Tracer Studies on the employment outcomes of the vocational graduates in Botswana (2006 and 2011) and the other one on;

2) Identifying a list of priority skills and to develop strategies to fast track priority skills development (2006).

Although the reports touch on elements of human resource development, missing was how findings from such studies would contribute to developing a framework for a development of a more stakeholder policy aiming at providing a market-led TVET.

An overview of the second Tracer Study conducted by BOTA on the employment outcomes of the vocational graduates in Botswana and its findings is presented below.
1.4: Background on Tracer Study on the Employment Outcomes of the Vocational Graduates

The second Tracer Study was funded and conducted by Botswana Training Authority in 2010. Its purpose was to establish employment outcomes of the Vocational Training Graduates of BOTA accredited institutions (government and privately owned) in Botswana. These institutions offered programs in accordance with the Botswana National Vocational Qualification Framework (BNVQF). The Tracer Study was designed to research the employment situation of TVET graduates, including their employment rate, relevance and effectiveness of TVET programs, waiting time for first employment, employer satisfaction with TVET graduates’ skills and competence levels, and possibly synergistic links between the industry and TVET institutions in Botswana. The surveys used in the Tracer Study consisted of closed and open responses for graduates and semi structured questionnaires for key informants, such as trainers and employers. The target sample was 1080 graduates, 100 trainers and 50 employers. The response rates were reported to be 53% for graduates, 58% for employers and 100% for trainers (Bolaane, Chuma, Toteng, & Molwane, 2010). The present researcher was not involved in the Tracer Study.

The Tracer Study referred to “Vocational Education” (VT) but this is synonymous with TVET in the present study. Based on these observations, the cohort appears to have reasonably represented the TVET graduates from within TVET institutions accredited with Botswana Training Authority and should be applicable to the broader and current Botswana TVET system in general.

1.4.1: The findings from the Tracer Study

The following themes guided the tracer study; employment outcomes and occupation of TVET graduates; occupational mobility of the TVET graduates and the means by which graduates acquire employment; the relevance and effectiveness of learning in VT in relation to employability (Skills Mismatch).

The study found out that only about 50% of respondents were employed. The trade related courses (construction trades, craft trades and industrial area of specialization) scored the highest proportion of both the unemployed and employed cohort. The employed cohort
was proportionally higher among graduates with the National Craft Certificate (NCC). However limited mobility of graduates across areas of specialization was observed, with approximately 83% of graduates in the areas of construction trades, craft trades and industrial, and commercial, clerical, business and public administration specializations employed in their area of training. There was also limited mobility of graduates across employers with approximately 67% of the respondents having changed jobs at most once. Respondents rated the skills they acquired from vocational courses highly. The respondents generally viewed the skills acquired at TVET institutions adequate to enable them to perform the tasks in their work adequately to the satisfaction of their employers. The graduate responses were however in disagreement with those of employers who rated the skills of graduates as only fair.

With respect to the above, the researcher attempts to understand government efforts in modernising the Botswana TVET system by introducing BTEP, while directing less attention to technician and trade test provision. It is also aimed at getting stakeholders’ perception of the overall TVET provision in Botswana.

1.5: Motivation for the study

This study is motivated by recognition of the need for TVET in Botswana to make a continuing and increasing contribution to the national economy. The most efficient form of such contribution depends on a deep understanding of a proper balance between the two forms of certification in place since 1994 and the two forms of TVET provision. Such understanding depends on hearing clearly the voices of current stakeholders, including lecturers, learners, employers and government officials. Understanding of this need requires some further background information on the local situation. This background will be followed by a statement of the problem that emerges from it.

Botswana has witnessed gradual economic growth since independence in the 1960s (Akoojee, 2005; Castree, 2006; Clarke, 2005). The discovery of mineral resources in the 1950s and the existence of a broad agricultural base, has elevated the country from being one of the poorest countries in Sub-Saharan Africa to one of the richest (Akoojee, 2005; Bolaane, et al., 2010; Clarke, 2005; Desert, 2008; Phiri, 2010; Schmidt, Thekiso, Overeem, & Siphambe, 2010). Diamond mining (which grew the fastest in the world
between 1980 and 1987, Quelch & Austin (2002)) and agricultural (beef) exports to EU has driven the country’s economic success, with other industry sectors (such as retail, manufacturing, construction, tourism, agriculture and transport) accounting for less than 15% of national employment. There is limited information about contribution of other mineral resources (e.g. copper, soda ash, gold and others) to the Botswana economy. However, the recent decline in the economic markets, especially diamond exports, has led to recognition of a need for diversification of skills development strategies as the economy broadens its industrial base (Modungwa, 2010; Phiri, 2010).

National Development Plan 9 foresees construction, manufacturing for export and hospitality (tourism, hotels and restaurants) as the fastest growing industrial sectors with anticipated growth rates ranging from 7 to 10.5 percent (Akoojee, 2005; Bolaane, et al., 2010; Botswana-Federation-of-Trade-Unions, 2007; Desert, 2008; Republic-of-Botswana, 1997b). This attempt at economic diversification by the Government has led to major industry groups complaining of the mismatch of training to industry demands. As a consequence, TVET graduates may find themselves with irrelevant qualifications and limited employment opportunities (Modungwa, 2010; Phiri, 2010).

Literature on the effectiveness of Botswana’s TVET system and its practice is limited. The only information is in the form of Government reports following the country’s independence in 1966. Although early criticism of the brigades led to the establishment of TVET colleges, more recently the colleges have been criticised as being out of touch with employer expectations by TVET stakeholders (Tabulawa, 2009; Tau & Modesto, 2010). It was envisaged that the post Botswana National Qualifications Framework training programs would equip trainees with employment related skills as well as flexible information and communications technology (ICT) skills thus contributing effectively to Botswana’s diversified economy. In 1997, the country mapped a vision within which certain roles are to be played and achieved by 2016. The Vision 2016 document outlined a long term strategy for the country to form a framework for existing educational policies. As Republic-of-Botswana (1997a) stated that the vision envisages Botswana to be “an educated and informed society” (p. 28) by 2016. To achieve this, Bird, et al., (2001) indicated that the country should:

1) Prepare its citizens for technological and information challenges;
2) Have market-led education systems;
3) Set highest possible standards for vocational and technical education;
4) Increase TVET access to all people.

Because of the transition from a traditional to a modern economy, the TVET system in Botswana is faced with the challenges of producing a highly competent workforce to meet ever changing economic demands of the world of work (Desert, 2008; Mead Richardson, 2009). Tau & Modesto (2010) observed that Botswana, for an effective TVET system, had to define “outcomes, level descriptors, and a set of occupational or knowledge fields” (p. 1). This urgent need was also fuelled by strong competition for employment opportunities between Batswana and people from neighbouring countries (Zimbabwe, South Africa, Zambia and Namibia), because their TVET qualifications are often rated of higher quality and level than the Batswana. The vision for National Policy on Vocational Education and Training (1997) was therefore to set the highest quality TVET system that could provide proper training for workers and expose them to changing international labour markets and technology (Akoojee, 2005; Presidential-Task-Group, 1997; Republic-of-Botswana, 1994; World-Bank, 2001).

The BNQF was to operate within three levels, Level 1 being the lowest and Level 3 the highest (Republic-of-Botswana, 1997b, 1998, 2001). The Department of Vocational Education and Training is the main provider of Levels 1 and 2 TVET; Government Ministries and the University of Botswana share provision of Level 3. The recently established Botswana Training Authority is responsible for promotion, monitoring and coordination of employer-based training.

Currently, there are seven government Technical Colleges and around 41 Brigades in Botswana. Technical Colleges offer TVET Levels 1 and 2 courses whereas Brigades more often offer TVET Level 1 courses. Level 1 TVET courses comprise trade tests, artisan training and NCC (National Craft Certificate). Level 2 TVET courses comprise BTEP foundation, Certificate, Advanced Certificate and Diplomas. Currently, the BTEP courses are offered in all Technical Colleges and a few Brigades in Botswana. The National Report of Education (2001) highlights these developments within the TVET system since the establishment of the National Policy on Vocational Education and Training in 1997. NDP no. 9 has clearly stipulated its stand towards financial commitment and support for the system and called for assurance of easy access for training as well as to improve the
quality of training offered. Its 6 year action plan included construction of several new technical colleges which would increase availability of training opportunities. An outline of new TVET programs was promulgated from foundation level up to Diploma level courses. These new programs commenced in 2001 with the belief that they would produce competent and flexible graduates who have the skills and qualifications to compete globally. Included in the plan was the specialised teacher education program which has been developed to upgrade the qualifications of lecturers in government technical colleges and brigades (Akoojee, 2005; Republic-of-Botswana, 2001; Tau & Modesto, 2010).

Table 1.2 below summarises the sequence of developments within contemporary Botswana prior to NDP 9. Entry into TVET programs at tertiary level is usually after 10 or 12 years of basic education after which those who do not gain entry to senior secondary schooling can have access to some form of skills training.
Table 1.2: TVET events since Botswana’s independence leading to NDP 10

<table>
<thead>
<tr>
<th>Events</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discovery of mineral resources</td>
<td>1950s</td>
</tr>
<tr>
<td>Botswana Independence</td>
<td>1966</td>
</tr>
<tr>
<td>Formation of Brigades</td>
<td>1965</td>
</tr>
<tr>
<td>Formation of Vocational Training Centres</td>
<td>1970s</td>
</tr>
<tr>
<td>Conversion of VTCs into Technical Colleges</td>
<td>1990s</td>
</tr>
<tr>
<td>Designing and formation of new BTEP</td>
<td>2000</td>
</tr>
<tr>
<td>Brigades take over project</td>
<td>2009</td>
</tr>
</tbody>
</table>

Most learners who choose the vocational education route are those who are not accepted in institutions of higher learning and therefore vocational education is often regarded as a lesser alternative. For the purposes of this study, only TVET Levels 1 and 2 will be considered (Brigades and Technical College based TVET).

1.6: Problem Statement

The National Policy on Vocational Education and Training (NPVET) is yet to achieve its mandate of providing market-led TVET to meet Botswana’s growing economy (Tabulawa, 2009; Tau & Modesto, 2010). The policy has not been understood and fully utilised by TVET practitioners in the country. With limited literature on the successes or otherwise of Botswana’s current TVET system, the effectiveness of mechanisms in place and relevance of training to meet labour market demands are subsequently subject to a strong debate among TVET practitioners and managers. The Brigades Movement has been more recently praised for producing employable graduates through successful links between education and production work (Bolaane, et al., 2010).

The modernised TVET programs are the opposite of what was hoped for. To date, research about the system’s effectiveness, how it should be structured, how it is developing, how best to utilise it and the impact on TVET teaching and learning processes has yet to be investigated in depth hence this study.

1.7: Purpose of the study

Desert (2008) and Republic-of-Botswana (1997b) observed that Botswana TVET provision was supply-driven with very little employer and industry involvement. An attempt to improve the situation by engaging in consultations and reaching consensus with these stakeholders was vital. From such engagements, Desert (2008) states:
Structured work-based learning (SWBL) was adopted. In this context, industry determines what learners and prospective employees need to know in order to be suitable for the working world. This involves various pathways employing mixes of on-the-job and off-the-job learning and assessment (p. 161).

This study therefore intends to seek stakeholder perceptions of Botswana’s current TVET system since the implementation of the recommendations from the RNCE (refer to Table 1 on page 2). It also aims to look at the changes brought about by the inception of the NPVET on its attempt to provide market-led TVET. Market-led TVET is defined as training whose outcomes closely correlate with industry and employer labour force needs; that is, it is determined by the market of skills users. This will then be measured against suggestions from existing research literature about effective TVET practices. Since there is scarce data and research on Botswana’s TVET system, suggestions from the literature would assist in identifying the areas of ineffectiveness within the system leading to corrective measures and strategies to improve overall provision of TVET in Botswana.

1.8: Objectives of the Study and Research Questions

This study will attempt to put forward a case for developing an agenda for change and reform in the TVET system which is driven by the stakeholders. This will then lead to improved human capital in Botswana. Also, a goal is to inform a framework for stakeholder TVET policy development that could be applied in other countries with similar economic and social parameters.

The specific objective of this study is to investigate the impact of the 1993 Report of the National Commission on Education (RNCE) and 1997 National Policy on Vocational Education and Training (NPVET) on encouragement of a market-led TVET system that meets Botswana’s economic and social demands, through interaction with stakeholders. The following research questions have therefore been identified:

1) How do stakeholders perceive current TVET practices in Botswana?
2) To what extent do they perceive the current TVET practice to be effective?
3) In what ways do they perceive the system could be made more effective?
4) How do the interactions between different stakeholder groups influence current TVET practices in Botswana?
5) What impact does the interaction between TVET sectors in Botswana have on their relative effectiveness?
1.9: Significance of the research

The findings of this study will contribute to the on-going national debate in Botswana about TVET policies and their effectiveness in contributing to national economic and social development goals. It will also contribute to scholarly research for developing a framework for TVET reform which is stakeholder driven. Like Republic-of-Botswana (1997b), the researcher believes that the study will inform policy development that delivers a more focussed and relevant national TVET system which is directed towards “employment creation, productivity improvement, and overall human resource capacity building in an effort to achieve economic competiveness and sustained development” (p. 4). It will also contribute to a framework for TVET effectiveness research studies in Botswana, a research area which is still in its infant stage and needs to be developed.

1.10: Outline of chapter headings

This first chapter of the study presents an overview of the study. The second chapter provides a comprehensive review of related literature on TVET effectiveness with reference to Botswana government policies on education which influenced the development of the overall education system in Botswana. Particular reference will be on world best TVET practices that have influenced change globally in the TVET arena. Chapter three touches on the research methodologies, research design and samples, as well as the justifications for application of certain research methodologies. Chapter four presents the analysis of quantitative data and results from the empirical survey. Analysis of qualitative data and interpretation is in chapter five. Chapter six provides a discussion of findings from both set of the quantitative and qualitative data leading to the conclusions, implications and recommendations for the study in chapter seven.
Chapter 2: Literature review

2: Introduction to chapter

Chapter 2 gives an overview of literature reviewed as the foundation for this study. It provides an overview of global TVET reforms as well as an overview of TVET status in Africa. The discussion of TVET in Africa touches on system reforms in countries like South Africa and Botswana. Discussions of TVET in these two countries lead to a brief discussion of policy borrowing and TVET systems reform. The chapter also includes a framework for understanding Technical and Vocational Education and Training.

The chapter also provides a basis for understanding stakeholder perceptions of TVET systems as well as measuring TVET effectiveness. Evaluation of TVET policies, strategies and system outcomes as well as the evaluation of TVET programs are also included. A chapter summary is also provided.

2.1: Global TVET reform-An overview

TVET and skills development have now become increasingly high priority on global policy reform agendas (Anderson, 2009). An emerging international focus on labour market and workforce development emphasises that TVET is seen as a vehicle for achievement of goals in changing persons’ lives thus increasing individual accountability and responsiveness to changing economies (Ismail & Abiddin, 2014; King, 2009b, 2011a, 2011b; McGrath, 2002; Ogunade, 2011). Boutin, Chinien, Moratis, & van Baalen (2009) also highlighted TVET as one of the solutions to poverty alleviation, and that it can “promote peace, conserve the environment, improve the quality of life for all and help achieve sustainable development” (p. 86). Of significance is that the efforts continue to improve the education and training systems, especially that of TVET, in all regions of the world (King, 2009b; Park, 2009). Most countries are aiming for a competitive workforce through education systems that are globally competitive and recognised, as they position themselves to take on new challenges (Foster, 2007; Fretwell, 2007; Jacobs & Hawley, 2009; McGrath, 2002; Ogunade, 2011). Many countries have attempted to influence change by reforms in their education systems.

The trend is very strong in developing countries including those in Africa (Allais, 2012; Anderson, 2009; S. McGrath, et al., 2006; Tabbron & Yang, 1997). This quest for reform is influenced by the internationalisation of the global economic market as well as
changing information communications and technology (Boutin, et al., 2009; Ismail & Abiddin, 2014; Jacobs & Hawley, 2009; King, 2011b; McGrath, 2002; Tabbron & Yang, 1997; World-Bank, 2001). Massive reforms in recent years are linked to constitutional reform and the national agendas of such countries. These agendas often focus on workforce performance, productiveness, management and active participation by all stakeholders as they keep pace with the changes as new developments emerge (Anderson, 2009; Hopkins, 2002; King, 2009b; Powel, 1998; Watson, 1999). As Hollander & Mar (2011) indicate, “getting the macroeconomic context right remains the essential first step in focusing on skills” (p. 43).

Priorities include thorough preparation for work life and life-long learning for individuals (Ogunade, 2011). With constant advancement in Information and Communications Technology (ICT) as well as science in the twentieth century, new approaches to teaching and learning have become vital in all aspects of education and training (Ismail & Abiddin, 2014; Maclean & Wilson, 2009; McGrath, 2002; Rojewski, 2009; Tabbron & Yang, 1997). Maclean & Wilson (2009) stated that:

The current focus is increasing upon preparing knowledge workers to meet the challenges posed during the transition from the industrial age to the information age, with its concomitant post-industrial human-resource requirement and the changing world of work (p. Xcvi).

These challenges call for educational and training policies which support and encourage life-long learning, where trainees will have opportunities to up-skill themselves to keep pace with the ever changing nature of the workplace (King, 2009b; McGrath, 2002; UNESCO & ILO, 2002). With major influences being internationalisation of training and labour-market development, countries have been forced to re-examine training policies to redefine goals, visions, roles and responsibilities to incorporate elements that will effectively address these challenges. To accomplish this, each country and each society must structure its education system in accordance with its own economic needs, aspirations and traditions (King, 2009b; Ogunade, 2011; Tabbron & Yang, 1997). As UNESCO & ILO (2002) further recommended, such a move should be seen as:

1) A mechanism for transition into and effective participation in the world of work;
2) An aspect of lifelong learning and a preparation for responsible citizens;
3) An instrument for promoting environmentally sound sustainable development.
This is believed to be a factor which can contribute effectively to the accomplishment of social and cultural goals, and economic development, while at the same time fully developing the capabilities of individuals for active engagement in the establishment and implementation of these goals (Park, 2009). As Hollander & Mar (2011) state:

TVET systems are no longer expected to educate and train for a stable job, but to produce individuals who are innovative, capable of evolving and adapting to changing circumstances. There is a shift from the concept of ‘TVET for employment’ to ‘TVET for employability (p. 43)

This should be through policies and implementation practices that promote:

1) Increased access for all,
2) high quality, relevant and effective TVET programmes,
3) Life-long learning.

In Botswana, formal government training initiatives started after independence in 1966, with TVET gaining popularity. At the time, the country’s Brigades (community based training centres) were well known for apprentice training and only a few government training centres (vocational training centres) were in existence. Most vocational training centres, now promoted to Technical Colleges, were established during the 1980s. At that time, coordination of training and usage of human and material resources were left to individual colleges but their practice was deemed poor and of questionable quality (Akoojee, 2005; Republic-of-Botswana, 1997b).

The National Policy of Vocational Education and Training (NPVET) of 1997 was aimed at guiding and directing the country’s TVET system in achieving societal, developmental and economic goals. One of the indicators for achieving this vision outlines provision of TVET programs that would cultivate those elements of human life, (such as development of knowledge, skills, positive attitude, quality consciousness) that contribute and are essential to active processes of human development.

2.2: The current global debate on TVET status

As TVET is the major supplier of skilled and qualified labour to industry, it is important to explore world views and perceptions on the matter. Anderson (2009) has associated TVET with productivism, neoliberalism and human capital theories. In a productivist
view, Park (2009); Anderson (2009) and King (2009b, 2011b) reflected on the post-colonial era and the influence aid agencies had on continuous TVET and labour market policies reviews and reforms in developing countries which were based on the western view of economic development, industrialisation and work. One of the prescriptions by the aid agencies viewed economic growth to be viable through accelerated industrialisation, which in turn will require a supply of skilled workers (Anderson, 2009).

On the other hand, neoliberal theory was traced as far back as the nineteenth century when the concept of globalisation swept across all nations (Castree, 2006; Clarke, 2005; Thorsen & Lie, 2006). As Clarke (2005) and Thorsen & Lie (2006) put it, the neoliberal theory advocates for the development of the division of labour where the wealth of the nation would be a result of the development and encouragement of initiatives and enterprises from individuals and where from such initiatives and enterprises are applied freely within and beyond national boundaries. Greater emphasis is on stability in economic policy (Thorsen & Lie, 2006). Thus, the “efficient allocation of resources is the most important purpose of an economic system, and the most efficient way to allocate resources goes through market mechanisms…” (p. 8).

In TVET such a theory prompted aid agencies to promote structural adjustment and economic growth through the modernisation of industry and education systems. Central to such processes was the concept of skill formation and the redesigning of education and training institutions. Skills development was identified as one of the few elements that can form part of a strategy for responding to globalisation (McGrath, 2002). Thus, that improved skills offer individuals, enterprises and economies better opportunities to respond more successfully to globalization as “skills are now seen as important part of education’s role in labour market preparation” (p.421). Reforms included the autonomizing and enterprising of TVET provision, with the intention of increasing its efficiency and responsiveness to labour market demand. Park (2009) and King (2009b) cited as examples: adoption and standardisation of skills, creation and provision of a regional framework of vocational qualifications and moving towards the internationalization of education and curricula, accreditation and certification, improving the labour market information system, enhancing international networks for stronger collaboration and co-operation and providing employment support systems in the form network systems, and improvements in employability. Such global TVET policy reviews
and reforms saw the adoption of competence based training (Anderson, 2009; Park, 2009), characterised in TVET as market-based and demand-driven.

In human capital theory, stronger emphasis is placed on the critical role government policy plays in the economic influence on the significance of skills acquisition, knowledge and attitudes through formal and informal education and training systems (Anderson, 2009; Ismail & Abiddin, 2014; Ogunade, 2011; Park, 2009). As Ismail & Abiddin (2014) state, human capital theory highlights the quality of workers as a key factor in sustainable economy. Such a theory advocates for provision of effective education and training systems that will effectively develop knowledgeable citizens with necessary skills to support and drive the economy. Ogunade (2011) describes human capital as “accumulated stock of skills and talents, and it manifests itself in the educated and skilled workforce” (p. 2). An emphasis which highlights the economic dimension of education and training policy and the need to consider education and training as an instrument of economic policy (Teixeira, 2014). Schwalje (2011) discusses a knowledge-based development as human capital development which is driving towards a society characterised by skilled, flexible, and innovative individuals nurtured through quality education, employment and broadly accessible life-long learning opportunities. Hence continuous production and development of good quality skills are increasingly seen as being critical to labour market productivity and competitiveness (King, 2009b; Ogunade, 2011). Schwalje (2011) further suggests that lack of effectiveness of skills formation systems to produce high level skills serves as a hindrance to knowledge-based economic development. Thus, many countries move towards knowledge-based economic development certainly requires the transition to more effective skills formation systems.

In TVET, this is reflected in most TVET system reforms across the globe by adoption of TVET curricula which are tailored to workplace requirements. As Anderson (2009) stated:

> By training and assessing TVET learners exclusively against industry-determined standards referenced to existing workplace practices and performance criteria, CBT strengthens the relationship between learning and work and binds TVET to the labour market (p. 41).

TVET policy reforms emphasise the need to prepare learners to be responsible citizens who take part in their societal economic activities thus contributing to national economic development. Another emphasis is on access and equity to all forms of TVET, and elements of life-long learning to be part of the overall TVET reforms. This view however
forms part of the international debate on which aspects of TVET should be supply-led and which parts are to be demand-led. King (2009b) concluded by linking human capital and neo-liberal theories to the role of aid agencies especially that of UNESCO and urge them to:

Position TVET as a full part of a liberal education, but also argue powerfully that it is an investment with significant returns, including the well-being of workers, enhanced productivity and international competitiveness (p. 5).

In this process, King (1993, 2009a, 2009b, 2011a, 2011b) argued that ‘Technical and vocational skills development (TVSD)’ is a new term which might be used to refer to the specifically work-oriented skills acquisition, taking place in multiple locations. These locations include:

i) school- and college-based TVSD, both public and private;

ii) work- and enterprise-based TVSD, whether in the formal or informal sector; and

iii) TVSD in post-school training centres in the public, private for-profit and non-profit spheres.

These are usually responsibilities of Ministries of Education and Labour and Home Affairs. Other providers include employers, NGOs and the private sector. King (2009b, 2011b) highlighted the current widespread debate that technical and vocational skills should not be supply-led but be demand-driven. King (2009b) stated that:

Educational institutions should not merely turn out graduates by virtue of the number of places, teachers and courses, but rather the supply should be conditioned by the labour market demand for such and such skills... this is a debate or a trade-off where UNESCO, with its tradition of rights-based approaches to education, would question the generalization about the need solely for a demand-led determination of skills. The rights of particular widely excluded groups to access skills development is a natural concern for UNESCO (and indeed of ILO). In addition, the requirement for skills provision to be demand-driven is at least conceivable in industrialized countries where the formal sector of the economy is dominant (p. 7).

With the on-going debate about emphasis on TVET being either supply-led or demand-led, King's message highlights the contrast between the two by indicating that the discourse of skills is much more open-ended. With the world TVET aiming to train for the right skills that enhance comparative advantage, market growth and industrial expansion, these theories rely on training and development which identifies needs assessment as the first step in developing a cohesive and effective training systems. With
this goal, Ogunade (2011) affirms that developing countries are therefore to identify current competencies and measure them against developmental needs in terms of strategic objectives. However, Anderson (2009) advised that, with the concept of skills formation and development of competencies, different stakeholders have differing perceptions and roles. Thus the section below explores TVET in Africa and establishes the status of TVET system reviews and reforms in some African member states.

2.3: TVET in Africa-An overview

For decades, TVET in most African countries was perceived to be inferior to the general stream of education (McGrath, 2011; S. McGrath, et al., 2006; Oketch, 2009). This perception was strengthened by the decline in international support for the Africa region in the 1990s, (UNESCO-UNEVOC, 2013) (2013). UNESCO (2013); McGrath (2011) and Oketch (2009) noted that criticisms of African TVET systems were centred around:

1) the non-relevance of training to skills required in the labour market;
2) lack of synergy between training providers with industry;
3) disjoint training practices to realities of economies;
4) high costs associated with TVET.

Where international support was offered, it prescribed specific changes to the current TVET system. Pal (2006) and Dale & Robertson (2012) however urged that such a practice by ‘international governmental organisation’ is demonstrating interest on behalf of ‘best practice’ models. They alluded such as key effects of globalisation. Dale & Robertson (2012) conceptualise globalisation as “a historical process involving the uneven development and partial and contingent transformation of political, economic and cultural structures, practices and social relations” (p. 3). They observed:

An evident shift away from a predominantly national education system to a more fragmented, multi-scalar and multi-sectoral distribution of activity that now involves new players, new ways of thinking about knowledge production and distribution, and new challenges in terms of ensuring the distribution of opportunities for access and social mobility (p. 3).

In African TVET, some of the systematic changes required included the shifting away from traditional TVET, which was more content oriented, to competency based TVET and formulation of national qualifications frameworks to guide the overall TVET system and new governance (McGrath, 2011; S. McGrath, et al., 2006; UNESCO, 2013). Coupled with changes in the industrial structures, this pressured African governments to
review their TVET systems. The African Union member states envisaged TVET programs that would address issues of youth transition to the labour market and at the same time produce sets of skills that were relevant to desired high economic growth across the continent (McGrath, 2011; Oketch, 2009; UNESCO, 2013). Across the region, UNESCO (2013) state that it is evident that TVET reforms in member states indicate a largely shared vision that:

…successful economic development requires a well-known set of characteristics, including improved international competitiveness, increased productivity, accelerated technological development and improvements in employment and/or employability (p. 36).

The number one priority in their national policies clearly indicate that TVET has a major role in skills development that promotes individual and national economic competitiveness and inclusion as is evident in Botswana, Mauritius, South Africa and Swaziland. There is evidence that member states are now working endlessly to lift the status of TVET in the Africa Region (African-Union, 2007; S. McGrath, et al., 2006; Oketch, 2009). The African-Union (2007) earmarked TVET as one of their strategic priorities as an important part in national development. The main goal of TVET systems as seen by the African-Union (2007) and UNESCO (2013) is to promote skills acquisition through recognisable TVET programs that are flexible, competency-based with new forms of student assessment that comply with workplace requirements for livelihoods and citizen empowerment. The documents emphasised the need for member states to:

1) revitalise, modernise and harmonise TVET in Africa in order to transform it into a mainstream activity for African youth;
2) use TVET programmes and TVET providers as vehicles for regional cooperation and integration;
3) strengthen stakeholder involvement in effort to create synergies and share responsibilities;
4) harmonise TVET policies, programmes and strategies in Africa.

Improvements are noticeable across most African states although quality provision and relevance of such is still a concern (McGrath, 2011; UNESCO, 2013). Below is a brief summary of the status of TVET systems in the Southern Africa Development Community (SADC) region. This study is based in a SADC member state (Botswana).
In the Southern African Development Community region, TVET activities are governed by the SADC protocol on Education and Training of 1997. The focus of the protocol was to drive the development of a set of national policies which will lead to regional qualification frameworks (SADC, 1997; UNESCO, 2013). As asserted by the African Union (2007) TVET systems differ and are offered at different levels by different types of institutions such as technical and vocational colleges (both public and private), polytechnics, enterprises, and apprenticeship training centres. African TVET has been heavily influenced by former colonisers: McGrath (2011) and McGrath et al. (2006) cited Scandinavian folk high school tradition, the American comprehensive high school, the German dual-system of training and British further education college as commonly used international models. Although international observers believe African states can learn from such practices, they warn against blindly adopting such practices. They stress complexities that accompany each model, beyond the possibility of undermining local cultures in the drive for sustainable development. Notwithstanding such concerns, there have been some significant TVET developments in the region. Sub-Saharan African countries like Botswana, South Africa, Mauritius, Lesotho and Swaziland have had major significant developments in their TVET systems (McGrath, 2011; S. McGrath, et al., 2006; Oketch, 2009). The SADC member states have shown interest in developing the new sets of skills needed in the new economy and this can only be achieved only when TVET systems take into account the needs of important stakeholders.

The establishment of National Qualification Frameworks (NQF) has been a common regional response to the need for articulation between TVET and the general education systems. SADC commitment to NQFs involves issues of whether TVET qualifications permit learners to re-enter the academic education stream; and at what level (S. McGrath, et al., 2006). UNESCO (2013); McGrath (2011) and McGrath et al. (2006) noted positive developments including establishment of NQFs and national training authorities (e.g. Botswana in 1998, South Africa in 1995, Namibia in 1996, and Mauritius in 2002).

African TVET has always been criticised for lack of efficiency and effectiveness. McGrath et al. (2006) states:

Adequate finance is crucial to the development of highly efficient TVET systems and for the achievement of many elements of the TVET transformation agenda. However, many TVET systems and sub-systems in the region remain highly dependent upon the state funding. This is clearly
McGrath suggests that levies can be used as an important source of funding for TVET and that the different models could be adopted within the Africa region. Another suggestion was that of improving cost recovery measures for public providers. This could be in the form of increasing training fees, through sales of goods and services and training tailored for employers as short courses. In terms of curriculum reform, progress is noted in that most states observed seem to be making their TVET program more responsive to industry demands and promoting employability of the graduates. In most countries, competency based training has been introduced. Another observable progress is attempts to address issues of equity and access in policy and TVET institutions. There is evidence of increase in enrolments for most member states, new institutions are continuing to be built and flexible TVET programs are becoming more common. Still of concern however, is that less attention in the SADC region is directed towards training for the informal economy. McGrath et al. (2006) recommended that member states explore experiences in other parts of Africa while considering the specific conditions of their own local contexts.

African countries face a number of challenges as they undertake TVET reforms. When analysing TVET policies in Africa, McGrath (2011) compared them to Asia and found that ‘African attitudes towards skills and vocational education are less positive than those in Eastern Asia’ (p. 39). Thus, much needs to be done in African TVET systems to place them on the same footing as the rest of the world. However, as demonstrated in the next section, African countries are at different levels of reforming their VET systems and that each has its own unique challenges.

South African (SA) TVET is discussed because of its economic ties with Botswana and because SA began its TVET reforms before Botswana. Hence experiences there could be used as reference points for improvement of the developing Botswana TVET system.

2.3.1: TVET reforms in South Africa - An overview

In the mid-1990s, the TVET system in South Africa moved away from outcomes based education (OBE) origins towards more competency based training. The newly adopted competency based training (CBT) had its roots which were strongly influenced by similar
developments in countries like England, America and Australia (Allais, 2007, 2011, 2012; Parker & Walters, 2008). From such developments and objectives from framework through authority, independent agencies were established, which saw the setting up of training authorities: Sectoral Education and Training Authorities, (SETAs) in 2000, and National Skills Authority (NSA) in 1999 (Allais, 2012; Chisholm, 2009; Kraak, 2004; S. McGrath, et al., 2006). However, these intentions met major challenges. Two government authorities, the Department of Labour (DoL) and the Department of Education (DoE), are responsible for TVET and they did not integrate (Chisholm, 2009; Ensor, 2004). The Department of Education worked on the supply-side while the Department of Labour concentrated on demand-side strategies (Chisholm, 2009).

In South Africa, the reforms in the overall education and training systems were evident after formation of the new government in 2009 (Allais, 2012). Thus, the post-independence policy reforms had focussed on the reorganisation and restructuring of the education and training systems towards a framework based on an integrated system that promotes equity and skills development (Allais, 2012; Kraak, 2004). The National Qualifications Framework in South Africa was established in accordance with the South African Qualifications Authority Act of 1995 (Republic-Of-South-Africa, 2008). Its aim was to:

1) Create a single integrated national framework for learning achievements;
2) Facilitate access to, and mobility and progression within, education, training and career paths;
3) Enhance the quality of education and training;
4) Accelerate the redress of past unfair discrimination in education, training and employment opportunities (p. 6).

The particular NQF was to address and enable aspects of lifelong learning in ways which contribute to economic development, social justice and personal empowerment aimed at supporting South Africa’s Human Resource Development Strategy and the National Skills Development Strategy (Parker & Walters, 2008; Walters & Isaacs, 2009). South African NQF was to enable different and multiple pathways according learners the opportunity to move across the education ladder and to progress upwards.

The South African NQF was developed as an outcomes-led model qualifications framework, based on the idea that educational standards could be nationally ‘set’ by
defining learning outcomes and assessment criteria. The key principle of this model is that qualification units and standards must be made of learning outcomes defined by stakeholder-based structures that are not affiliated to a particular institution or learning program (Allais, 2007, 2011, 2012; Parker & Walters, 2008).

As mentioned earlier in this section the new government brought about changes in the whole education sector in South Africa in 2009. This development brought state agencies responsible for quality assurance, standards setting, assessment and certification under the same department (Allais, 2011). Some of the noticeable developments within the South African TVET system post-apartheid included:

1) the establishment of the reformed training boards;
2) introduction of a competence-based modular training;
3) introduction of a Nation Skills Development Strategy;
4) establishment of Sectoral Education and Training Authorities (SETAs);

Young people had more access to TVET and employment opportunities through SETA-funded courses facilitated by the Department of Labour (Chisholm, 2009) but inadequate support systems resulted in conflicting qualifications issued by TVET institutions and SAQA structures. This challenge to the implementation of the objectives of the local NQF was compounded by limited incentives, inadequate resources and consequent low quality TVET provision. This led to little skill development, fragmentation in the overall TVET provision, poor equity and low research output (Allais, 2012; Chisholm, 2009; Cloete, 2004a, 2004b; Kraak, 2004).

Many of the outcome-based qualifications and unit standards that had been developed by standards-generating bodies created by SAQA, and registered on the NQF, were not implemented as they were perceived as too detailed and irrelevant to education needs (Chisholm, 2009; Cloete, 2004a). Further, Parker & Walters (2008) observed that the quality assurance systems put in place were unable to effectively address weaknesses in the overall TVET system.

Part of the explanation for this ineffectiveness lies in a lack of systematic coherence and collaboration between the role players and of clear differentiation of their roles and responsibilities (p. 73).
This resulted in a lengthy review process, which aimed at differentiating between Standard Setting and Quality Assurance practices, and also in delayed execution of NQF objectives. South Africa’s NQF has not met the expectations of employers with respect to improving the quality of training thus producing a suitable workforce. Beyond industrial requirements, the NQF appears to have slowed down SA’s progress towards developing a lifelong learning system (Parker & Walters, 2008).

In 2009, the shape of NQF, as well as much of the quality assurance system built around it was completely changed. In summary, SA began reforming TVET systems a decade before most SADC member states. These reforms include the introduction of Outcomes-Based Education (OBE) and Training in the early-1990s before the shift to Competency-Based Education and Training (CBT) in the mid-1990s after the formation of a new Government. These new modes of TVET were then adopted by most SADC member states including Namibia and Botswana. Following is a brief discussion about the context of TVET in Botswana.

2.3.2: The context of TVET in Botswana

South African TVET systems have some commonalities with those in Botswana. As former British colonies, both the countries have inherited most of their education policies from the United Kingdom.

The expansion and reforms of education in Botswana came in the mid 1970’s, a decade after the country’s independence in 1966 (Pandey & Moorad, 2003; Tournas, 1996). The first National Commission on Education (NCoE) in 1976 observed dramatic growth in the country’s education since independence (Republic-of-Botswana, 1977). Noticeable was the growing and changing society as well as the economy requiring fresh attitudes, skills and abilities. Like many developing countries, Botswana has planned educational policies in phases and developed educational goals, national philosophy, and a vision to create an ideal society to enable its people to realize their potentials and live in peace and prosperity (Pandey & Moorad, 2003).

The following section discusses the history of Botswana Brigades as the first TVET institutions in the country to provide formal TVET.
2.3.3: History of Botswana Brigades

The Brigades were established in 1965 under the ‘Notarial Deed of Trust’ and were managed by independent Boards of Trustees (Yezo, 2013). They were autonomous institutions. Their establishment depended on the initiatives of individual communities and each Brigade had its own specific objectives which were set out in the Deed of Trust. The Board of Trustees consisted of community members, student and staff representatives as well as some from the Ministry of Education who were to oversee the management of the Brigades and ensure that the objectives of the trust and the interests of the communities were met. The Coordinator of the Brigades who acted as the Board secretary, the Chief/Headman of the village and the District Commissioner were ex-officio members (Yezo, 2013).

According to Van Rensburg in the 1970s, the objectives of the Brigades were to fill a vacuum in skills development for many young people in rural areas, promote rural development, act as a ‘social safety valve’, provide goods and services to the communities and curb urban migration. The Brigades provided theoretical, practical and on-the-job training for school leavers in fields, such as in construction, mechanical, textiles and agriculture. Through the establishment of production units, they contributed to employment and income generation at village level. Brigades were headed by Coordinators, who were assisted by Training Coordinators. The departments were headed by unit managers, who were responsible for immediate supervision of teachers and instructors in those units (Yezo, 2013).

The first Brigade in Botswana was established in 1965 by Patrick Van Rensburg as an alternative to formal secondary education (Akoojee, 2005). There were a large number of Standard Seven (last year of primary school in Botswana) learners who could not find a place in the few secondary schools. It was projected that by 1979 there would be 20 275 standard seven school-leavers out of which only 3430 would be able to find places in the 15 government secondary schools which were available and 1800 in the private secondary schools (Meyer, Nagel, & Snyder, 1993; Tournas, 1996; Yezo, 2013). In 1969, a coordinating body (National Brigades Coordinating Committee, NBCC) was established to standardise training and procedures with regard to objectives, modes of operation and curriculum within the Brigades (Yezo, 2013). Around 1976/7 the Brigades and National Centre for Vocational Training (NCVT) offered out-of-school and post-school vocational
education and training (Akoojee, 2005; Republic-of-Botswana, 1994, 1997b). It was in 1974 that the Botswana Government guaranteed financial assistance to the Brigades through a presidential directive. This prompted many communities to establish more Brigades in the 1970s, especially in the rural areas (Meyer, et al., 1993; Tournas, 1996; Yezo, 2013).

As Republic-of-Botswana (1977) states, training offered at that time was Trade Test C (an award within the National Vocational Awards level) “which was sufficient to meet the country’s needs for formally prepared workers at the first skill level” (p. 123). There were 30 brigades and 12 national centres for vocational training in existence in 1977. Republic-of-Botswana (1977) emphasised the future economy of the country and made recommendations about the overall education and training systems, with priorities and time frames for their implementation. Diversifying curriculum to include vocational subjects to expose pupils to some form of vocational skills by the end of their basic education was also emphasised. Including pre-vocational subjects in the school curriculum was a move to improve and strengthen pre and post vocational education in the country (Republic-of-Botswana, 1977, 1994, 1997b, 2001). Such a move was believed to be a better means to prepare the pupils for the world of work in case they could not proceed to senior secondary schools (Republic-of-Botswana, 1977). The expansion of basic education from nine to ten years exerted financial pressure on the government and raised concerns about the quality of education. The resources were not adequate to accommodate the expansion. It was then recommended that other opportunities for provision of learning out-of-school and post-school be explored.

The National Commission on Education in 1977 recognised complexity in Botswana TVET from existing training institutions, courses offered and the levels at which these courses were offered (Republic-of-Botswana, 1977). The existence of Botswana Brigades in the 1960’s was aimed at providing secondary education to a selected few who could not make it to secondary schools at an affordable cost. It progressed into offering vocational education “through productive enterprise which covers a large part of the cost of training and generate resources as well as employment for the community” (p. 175). The system was however criticised in Botswana of being poor quality, uneven and uncoordinated (Akoojee, 2005; Republic-of-Botswana, 1977, 1994, 1997b).
The history of formal TVET in Botswana (dating as far back as the 1960’s) was strongly influenced by trade testing and was deemed critical for economic development (Republic-of-Botswana, 1977). This was the only form of learner assessment and was to be continued and improved to strengthen such Government’s strategies for economic and social development. It was then recommended that the training standards be raised.

It was believed that capacity building by training institutions (Government Brigades and vocational centres (now Technical Colleges)) was sufficient to meet the country’s needs. With the Brigades and the vocational training centres responsible for skills training at the time, unproductive competition or overlap in training functions between these training institutions was discouraged. Regular consultation between stakeholders was to be maintained and maximised so as to seek ways of cooperation and to ensure that the economy can absorb the trainees, as well as improving quality and effectiveness of Botswana TVET. Emphasised in Government policies was also that the stakeholders be educated from the point when the policy is being formulated and to when it is executed. From such practices Republic-of-Botswana (1977) stated that

…the process of consultation may elicit more positive response to new measures from those whom they most affect…may help to avert serious administrative mistakes such as the announcement of measures inappropriate to the actual situation in institutions” (p. 188)…

An explicit example of how such consultation practices could benefit TVET was that of engaging with industry, especially with employers as board members, and involvement in areas of curriculum development and design. It was then suggested that industry involvement by means of offering apprenticeship and other programs would then expand national training capacity. Training by employers was considered an important aspect of skills development in Botswana as elsewhere (Republic-of-Botswana, 1977, 1994).

With TVET qualification, formal National Skill Standards were envisaged. It was then recommended that two forms of certification be explored. This was the National Vocational Awards level and modular certification with completion of the appropriate set of modules giving entitlement to the full certificate. It was also recommended that curriculum reviews should take place once every four years.
With much criticism of the TVET system at the time, recommendations of how the system could be improved were outlined. These strategic directions were supported by policy documents, directives and organisational structures to guide the overall system as outlined in Chapter 1, Table 1.1. The Revised National Policy on Education (RNPE) has been directing the provision quality education and training in the country since 1994 (Republic-of-Botswana, 1994).

At present, there are 41 Brigades in Botswana: 39 of these are still operational while 2 were established but have never operated. Most of these Brigades are in rural villages while only 2 are in towns (Yezo, 2013). The Brigades adopted a model of training known as Education with Production/ Training with Production (EwP), whereby trainees were involved in production activities in addition to their academic and practical lessons. Production was done in production units either within the institutions or outside the institutions. TVET courses offered in these centres are trade related as stated above. They also offer business and ICT courses at certificate level (Republic-of-Botswana, 1977; Tournas, 1996; Yezo, 2013). Only a few offers BTEP related courses.

The Government of Botswana carried out an evaluation of Brigades in 2001. Recommendations from the evaluation exercise advised the Government to take over the Brigades and convert them into Technical Colleges (Yezo, 2013). It wasn’t until 2009 that the Government launched the takeover of these institutions. Some of the factors that influenced Government intervention were: mismanagement of resources; financial instability; and poor quality of educational outcomes. In view of the above factors, the Government felt it was necessary to review the running of these institutions and ordered an audit whose recommendations resulted in a presidential directive in 2006 indicating and approving the takeover of the Brigades. Some of the objectives of the takeover were:

1) to improve the status and infrastructure of the Brigades;
2) to improve the quality of education; and
3) to improve management.

Consequently, the government took over 21 Brigades in 2009 and the last 18 were taken over in 2011. The Deeds of Trusts and Boards of Trustees for all the Brigades taken over were immediately dissolved. It is important to note that the Brigades upon their establishment were characterised by their commitment to education with production
Conversation with these institutions revealed that, those Brigades that have already been taken over by the Government, the enterprise part of training is declining as it was not included in the curriculum. The Brigades have not been able to continue and sustain this aspect of TVET as they used to in the past.

The Brigades are now government institutions under the Department of Technical, Vocational Education and Training (DTVET). Some of the challenges were associated with lack of EWP policy and how it could be incorporated and implemented within the current TVET curriculum, and how to account for the revenue created from such projects. It was stated the Department of Technical, Vocational Education and Training (DTVET) established teams to resuscitate and look at the formulation of EWP policy and guidelines to address these challenges. And more importantly, the focus should be directed to both forms of provisions in Brigades and Technical Colleges.

With the above challenges and concerns, it was however not clear as to how the administration of the two forms of TVET provision was going to be addressed. With the Ministry of Education and Skills Development administering BTEP in Technical Colleges and some Brigades, and the Ministry of Labour and Home Affairs with responsibility for apprenticeship courses, Republic-of-Botswana (1977) had very much warned against tension and competition within the TVET system and had suggested a unified system to ensure system effectiveness.

With the recommendations for improvement of TVET system in Botswana more than a decade ago, there have been reforms to the system as captured in Table 1.1 from formulation of TVET policy to guide the overall TVET system in Botswana; a TVET training levy to attract industry involvement, to formulation of BOTA and the National Qualifications Framework to ensure quality throughout TVET in Botswana. In Botswana, TVET is shared by the Government and the private sector. Government TVET is shared between the Ministry of Education and Skills Development and the Ministry of Labour and Home Affairs in more than 50 TVET institutions. Under the Ministry of Education and Skills Development, DTVET is responsible for planning and administering TVET in the country to meet the manpower requirements. Their mission is to:

Ensure open and equitable access to high quality lifelong learning technical and vocational education and training, of internationally recognised standards, through the efficient and cost effective use of resources, supporting economic diversification and growths.
The national focus on TVET gained momentum after the establishment of the second policy on education (Revised National Policy on Education, RNPE) in 1994. Some of the concerns noted by the 1977 review were highlighted by 1993 review, including the lack of vocational and technical training policy to guide the system as well as the coordinating body for certification and monitoring of the system (Akoojee, 2005; Republic-of-Botswana, 1994; Tau & Modesto, 2010). Such weaknesses led to the establishment of the first National Policy on Technical and Vocational Education (NPVET) in 1997, Vocational Training Act in 1998, BOTA in 2000 and the Botswana National Qualifications Framework in 2000 (African-Union, 2007; Akoojee, 2005; Basupang, 2007; Republic-of-Botswana, 1997b, 2001). NPVET was intended to raise the status of TVET in skills training and provision for the country’s economic development (Republic-of-Botswana, 1997b). Many developments have taken place within TVET since the establishment of NPVET.

Reforms in Botswana TVET were launched by the Government in 2008 to take over the Brigades under the direct responsibility of the DTVET. Most of them have now been transformed into Technical Colleges and other public training institutions. Within DTVET are five divisions: Policy and Development; Programme Development and Delivery; Human Resource Management and Development; Brigades Development; and Departmental Management. TVET funding in Botswana is mostly the responsibility of the Ministry of Education and Skills Development and the Ministry of Labour and Home Affairs. The construction and expansion of public TVET institutions was funded by the partnership between the Government and their collaborating partners, notably the European Union.

With some of the policy recommendations implemented as discussed above, the extent to which the TVET institutions in the country are meeting the policy objectives is yet to be well researched and fully documented. On the positive, it is noted that among the achievements discussed at length above, there is also the development of national standards for vocational qualifications and regulations for provision of vocational education and the use of flexible instructional methods employed in Government Technical Colleges. It is however evident that a lot is yet to be done to ensure the system’s relative effectiveness. This includes the appropriate use of competency based training for
BTEP and related courses. The appropriate usage of such instructional methodologies would require proper training of TVET Lecturers.

It is worth pointing out that neither the 1976 nor the 1993 reviews recommended phasing out the technician and trade test provision in Botswana Brigades and VTCs (Vocational Training Centres) as discussed earlier (chapter 1 section 1.2). With the NPVET calling for diversification of TVET curriculum to introduce modular and competency based programs alongside technician and trade test training, Botswana Technical Education Programs (based on British general vocational qualifications) were introduced and launched in 2001. It was believed that the launch of BTEP would improve both the status and the performance of the system. It is with this overview that the researcher attempts to understand the government efforts in modernising its TVET system by introducing BTEP at the expense of technician and trade test provision. A brief overview of BTEP is given below.

2.3.4: The Botswana Technical Education Programs (BTEP)

The modernisation of TVET programs included the development of the distinction between academic and vocational courses in schools. Benavot (1983) stated “the general expansion and differentiation of secondary schooling and second, the formalisation and incorporation of particularistic vocational courses and apprenticeship programs into public schools” (p.63). These new forms of training, work place attachment (on-the-job training) with classroom instruction, in some cases replaced existing apprenticeships systems as is proving to be the case with the current Botswana TVET system. Mass introduction of BTEP in most TVET institutions is taking precedence over the existing apprenticeship training model.

The Botswana Technical Education Program TVET curricula were devised by the government, labour unions and industry (Botswana-Federation-of-Trade-Unions, 2007; Tabulawa, 2009; Tau & Modesto, 2010) in 2000. These programs were perceived and viewed in the notion by Benavot (1983) that:

…the modern nation holds that its power depends largely upon the extent of its resources and the skill with which these are developed… (p. 64).
The programs are modularised and flexible in nature. It was hoped that this allows increasing access to TVET and promotion of lifelong learning, through multiple entry and exit points, and recognition of prior learning (RPL). The BTEP curricula are envisaged to prepare Batswana to be global competitors with meaningful understanding and experience of the world around them. As observed by Benavot (1983), the belief that upgrading of TVET programs, if directly linked to a nation’s economy, it could play a productive role in national development. And it was aimed at meeting the demands for a technically proficient labour force. Diversified modes of delivery for all TVET programs to acquaint learners with the use of modern technology as well as information handling are what NPVET in 1997 envisaged. This therefore calls for a system which views quality, and hence teaching and learning effectiveness as a priority. In view of developing countries and whether such move was viable in the present period, observers affirm that TVET should have been expanded in the contemporary world to meet the demand for more highly trained manpower and to enhance economic growth (Benavot, 1983; Nieuwenhuis & Shapiro, 2004).

With significant developments in this regard, collaboration and partnerships with other important stakeholders, such as the appropriate industry, was of paramount importance. From such collaborations, there should be a greater match between industry skill needs and the skill sets of the worker. Other stakeholders included the Scottish Qualifications Authority (SQA), (International-Bureau-of-Education, 2012). They are responsible for the inspection of the new BTEP programs and for endorsing the BTEP certificates. BTEP courses are designed from Foundation Certificate throughout to Certificate Levels (Level 2) and Advanced Certificate to Diplomas (Level 3) as shown in Figure 2.1 below.
Vocational programs offered cover areas such as: Clothing Design and Textiles, Construction, Hairdressing and Beauty Therapy, Hospitality, Travel and Tourism, Engineering, Multimedia and Business Studies all at Level 2.

However, the Botswana Technical Education Programs TVET qualifications are currently perceived as neither relevant nor appealing in the country’s cultural, socio economic and political context and there has been mounting concern about over-dependence on international expertise driving the programs (Akoojee, 2005). This concern has deepened as non-relevance of training to local job markets, leading to unemployment of graduates, and criticism of the system by TVET practitioners in the country began to surface as signs of system failure. With the BTEP failure to produce graduates who are employable, commentators began to question the government’s efforts; ‘training for the market that does not exist’ (Tabulawa, 2009). The author views this displacement as ‘economy-education dislocation’. Another example included the Botswana National Vocational Qualifications Framework whose foundation and implementation was dependent greatly on international experts who based their advice on knowledge of their own contexts, within which such frameworks had already failed (Tau & Modesto, 2010).

Unfortunately for developing economies, changes and innovations in TVET curricula came at a cost (Bolaane, et al., 2010; Stone, 2010; Tabulawa, 2009; Watson, 1999). It was realised that TVET had become very expensive to run and manage. This resulted in a ‘culture of dependency’ (Singh, 2001; Watson, 1994). Donor organisations such as UNESCO, the International Institute for Education and Planning (IIEP) and the World Bank have always been very influential in the development of educational and economic policies in developing countries. Unsurprisingly as Watson (1994) points out, many of the developments that swept across the African continent in the 1960s and 1970s were oriented and shaped by “Western economic thinking, because the industrialisation and
urbanisation that has taken place has been a result of Western investment” (p. 87). This is so because of the existing ‘bilateral’ and ‘multilateral’ relations between the donor countries (or agencies) and recipient countries (Bolaane, et al., 2010; Singh, 2001; Watson, 1994).

The form of ‘dependency’ that is very much evident in both educational and economic fronts to-date has disadvantaged many in that there is little or no support for local ‘socio-economic development’. Watson (1994) and Singh (2001) both suggest that aid agencies’ intention in running TVET affairs in recipients’ countries was to phase out the existing education forms, many of which had close ties with local cultures and were vocationally and technically oriented. Their programs seemed to be more about surviving in the ‘European World’ than about grooming responsible citizens for the emerging nations.

Western thinking is still very influential in developing countries. International observers like Watson (1994, 1999) and Singh (2001) strongly criticise this by noting that often the ‘indigenous cultures’ as well as the life of the local people are often not taken into account. Many working within the Botswana Technical Education Program share these concerns not only because the learners and lecturers are concerned about relevancy, sustainability and applicability to the local context, but because it is expensive to run Western-style TVET where there are limited opportunities for industrial experience because more time is spent in the classroom. Furthermore, employers who host industrial attachment placements have noted flaws within the BTEP due to the apparent mismatch between what is taught in the classroom and workplace skills required (Odora, 2011).

However, some observers take a more positive stand. Novoa & Yariv-Mashal (2003) see the post-colonial era as a phase which saw new means of information sharing and dissemination in which comparative approaches transformed existing practices. It was an era which fuelled the “sense of necessity for international cooperation and mutual responsibility” (p. 424). The need to understand policies from other countries brought about curiosity in ways of knowledge construction, acquisition and application. This inspired the need to re-shape and reform the education systems in developing countries and resulted in diffusion of development policies at the time when education was deemed as the best resource for achievement of social and economic progress (King, 1993; Yamada & Matsuda, 2007). The research carried out by both local and international agencies, political, social and economic pressures, and the comparative approaches used,
resulted in ‘educational solutions’ that were shared between countries and regions (Chakroun, 2010; Chisholm, 2007; SADC, 2011; Steiner-Khamsi, 2006). This process has been referred to as policy learning.

Trends in social development and population growth have resulted in the increased importance of TVET. The call for TVET institutions link more closely with workforce needs is being made in many countries. This is because, at least in developing countries of Africa and Asia, institutions are graduating large numbers of potential employees who do not match job skill requirements and are over-supplying the limited vacancies available in the labour market (Benavot, 1983; Ishumi, 1998). In other words, this calls for TVET programs that are directly responsive to the economy, flexible to changing market conditions and income generating. Considering the small industry base in most African states (including Botswana), Ishumi (1998) asks the following questions with regards to TVET programs:

1) What kind and at what level of TVET should these programs be offered?
2) With what stated goals might it be taken? and
3) At what risk of undesirable effects and possibly hidden agendas in the curricular process? (p. 164).

With recent reforms in education and training, TVET has gained much attention with regards to improved living standards. Its definition has been redefined and systems reformed (Foster, 2007; Nieuwenhuis & Shapiro, 2004). Foster highlights that:

The fields of career-technical education and economic development have been more closely linked than ever before. Those in research institutions are working to conduct meaningful controlled research studies to identify what works best to produce student achievement. Those involved in the business of assessment continuously strive to produce the achievement data needed to show student progress and programmatic improvement regarding applicable standards (p. 57).

As conceptualised by Nieuwenhuis and Shapiro (2004), the powerful economic forces such as globalisation and development in ICT compel TVET systems to be upgraded and be made more flexible. They note that almost all TVET systems across the globe are under review to accommodate these changes. The quest is on for a new balance which calls for:

1) Aspects of life-long learning to be embedded within initial TVET;
2) Flexible delivery of programs that are internationally recognised;
3) Integration of school-based training with workplace experience;
4) Relevancy of training to individuals and market needs.

The quest should therefore be viewed as a mechanism that could be used to improve practice in TVET. This however, is achievable only when systems have their objectives well defined, as further stated. The set objectives should be measurable as they form the foundation of the TVET system. These objectives can be organised in the three critical areas of: program; social and economic. The system’s appropriateness can be judged as of poor or high standards for both the learners and economy with available data to support the argument (Foster, 2007; Fretwell, 2007; UNESCO & ILO, 2002).

Modern TVET is associated with producing graduates who are market ready and who are able to compete and fit flexibly in the global market. The trainees are to be versatile and can actively participate successfully on the job (Deitmer & Heinemann, 2009; Ducci, 1998). They are of the opinion that either education or training can survive on its own. They stress that if TVET is only to focus on training for the labour market, then it is doubtful that graduates could successfully compete globally in the labour market with ever fast changing technology. They state:

TVET has to aim at thorough, broad understanding of a profession enabling graduates to incorporate new knowledge and developments. Enabling people to adapt to (and even actively shape) future technologies and work organisations, to become experts in their professions who are able to reflect upon work processes and optimise them, requires a broad range of skills-domain-specific as well as general ones. Developing these skills, TVET has to restrain itself partially from the actual demands of the labour market in order to secure skills for the future (p. 1522).

Gagnon (2009) and Rojewski (2009) assert that TVET facilitators should therefore be in a position to use a variety of teaching modes which better expose learners to the use of modern technology in the classroom at the same time exposing them to technology in the workplace.

As competency based assessment has been adopted for all BTEP related assessments, challenges of designing a curriculum that is reflective of workplace settings as well as appropriate assessment measures are dominant (Basupang, 2007). These forms of assessment require learners to demonstrate their capabilities in a skilful manner such that the end product would be reflective of individual’s understanding of complexities of
solutions to given problems that is contextualised to the work place. This allows judgement from all stakeholders to be directed towards linking such outcomes with program effectiveness and how such findings fit into the overall organisational mission and vision statements. The benefits of the exercise are that when the outcomes and findings are fully affected, they can improve and enhance the processes of teaching and learning. In this way, such an exercise could be part of the gradual development of TVET organisations and at the same time could be used as a mechanism of ensuring quality within the system (Deitmer & Heinemann, 2009; Ducci, 1998). Perceptions from different stakeholder groups in this study would provide a framework for ascertaining what makes a system effective.

2.4: Summary: An overview of TVET system reforms in Botswana

The Botswana National Vocational Qualifications Framework (BNVQF) was established after the enacting of Vocational Training Act in 1998. It came at a time when the government realised that training provided did not match the skills demands in the new economy (Tau & Modesto, 2010) and there was a need to ensure quality and raise standards by harmonizing existing provision. There are still concerns over recognition and accreditation of this BNVQF which is said to be difficult to establish. The newly established Botswana Training Authority (BOTA) was mandated with establishing a ‘more comprehensive system of vocational qualifications’ in collaboration with all stakeholders including employers and labour unions (Akoojee, 2005; Republic-of-Botswana, 1994). As an executive and coordinating authority, with its close ties with the Ministry of Education and Skills Development and the Ministry of Labour, BOTA should steer the development of training standards, the curriculum design, training guidelines including administration and awarding of qualifications (Republic-of-Botswana, 1997b; Tau & Modesto, 2010).

The Botswana Government put mechanisms in place to rationalise training. Three categories of training were established in accordance with the Botswana National Vocational Qualifications Framework. The envisaged TVET qualification, Botswana National Qualifications Framework was to operate within three Levels (1 to 3) of competence, Botswana National Vocational Qualification (BNVQ) 1 being the lowest
and the BNVQ 3 being the highest, and apply to all sectors of the National Vocational Education and Training System.

The Ministry of Labour and Home Affairs is responsible for the delivery of apprenticeship and industrial training which is Level 1 training (Republic of Botswana, 2001). The Department of Vocational Education and Training is the main provider of Level 2 TVET, whilst Government Ministries and the University of Botswana share provision of Level 3. The recently established Botswana Training Authority is responsible for promotion, monitoring and coordination of employer-based training.

Currently, there are seven government technical colleges and 41 brigades. The Department of Technical Vocational Education and Training (DTVET) is the main provider of Level 2 TVET whereas other government ministries and University of Botswana offer Level 3 TVET. The National Report of Education of 2001 highlights the developments within the TVET system in Botswana since the establishment of NPVET in 1997. NDP no. 8 has clearly stipulated its stand towards financial commitment and support for the system and called for assurance of easy access for training as well as to improve the quality of training offered (Akoojee, 2005; S. McGrath, et al., 2006; Republic-of-Botswana, 2001). Its 6 year action plan sketched construction of several technical colleges which would increase availability of training opportunities, outline of new TVET programs which will introduced foundation level up to Diploma level courses. These new programs started running in 2001 with the belief that they would better produce competent and flexible graduates who can compete globally. Included in the plan also was the specialised teacher education program which has been developed to up-grade the qualifications of lecturers in government technical colleges and brigades (Akoojee, 2005; Republic-of-Botswana, 2001; Tau & Modesto, 2010). Table 2.1 below gives an overview of TVET provision in Botswana.

Entry into TVET programs at tertiary level is usually after 10 or 12 years of basic education after which those who did not gain entry to senior secondary schooling can have access to some form of skills training. Most learners who choose the vocational education route are those who were not accepted in other institutes of higher learning and therefore vocational education is often regarded as an alternative route to after basic education.
Table 2.1: TVET provision in Botswana

<table>
<thead>
<tr>
<th>Type of institution</th>
<th>TVET programs offered</th>
<th>Number of institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. University of Botswana previously known as Botswana Polytechnic</td>
<td>Diploma and Degrees in engineering: Building, Civil, Electrical, Electronics, mechanical</td>
<td>1</td>
</tr>
<tr>
<td>2. Roads Training Centre for Technicians</td>
<td>Diploma and Certificate in road construction</td>
<td>1</td>
</tr>
<tr>
<td>3. Technical colleges</td>
<td>National Craft Certificates in various fields BTEP (Botswana Technical Education Program) Foundation Certificate and BTEP Certificate</td>
<td>6</td>
</tr>
<tr>
<td>4. Automotive Training Technical college</td>
<td>National Craft Certificates in various fields BTEP (Botswana Technical Education Program) Foundation Certificate and BTEP Certificate</td>
<td>1</td>
</tr>
<tr>
<td>5. Private training institutions</td>
<td>National Craft Certificates in various fields Diploma &amp; Degrees in various fields City &amp; Guilds</td>
<td>53</td>
</tr>
<tr>
<td>6. Botswana Brigades</td>
<td>Trade tests, National Crafts Certificates</td>
<td>41</td>
</tr>
<tr>
<td>7. Botswana College of Agriculture</td>
<td>Certificate, Diploma &amp; Degrees in Agriculture</td>
<td>1</td>
</tr>
<tr>
<td>8. Construction Industry Trust Fund (CITF)</td>
<td>National Craft Certificates, Diploma in various engineering courses</td>
<td>1</td>
</tr>
<tr>
<td>9. College of Technical and Vocational Education</td>
<td>Diploma in Technical and Vocational Education (Teacher Education)</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: The World Bank, 2000, p. 184

Botswana is praised relative to other African states, because of the considerable development of their TVET system allowing progress towards a national training system (Akoojee, 2005; World-Bank, 2001). See Figure 2.2.

With significant developments in this regard, collaboration and partnerships with other important stakeholders, including industry and the employers, was of paramount importance. From such collaborations, it is believed that there can be a greater match between skills supply and skills demand. Other stakeholders included the Scottish Qualifications Authority (SQA), (International-Bureau-of-Education, 2012). They are responsible for vetting new BTEP and for endorsing the BTEP certificates. The structure of Botswana TVET was discussed and summarised earlier in section 2.4. Reforms in Botswana TVET were launched by the Government in 2008 to take over the Brigades under the direct responsibility of the DTVET. Most of the Brigades have now been transformed into Technical Colleges and other public training institutions. Their autonomy in decision making related to the development of programmes, teaching and learning is thereby reduced. Within DTVET are five divisions: Policy and Development; Programme Development and Delivery; Human Resource Management and Development; Brigades Development; and Departmental Management. TVET funding in
Botswana is mostly the responsibility of Ministry of Education and Skills Development and the Ministry of Labour and Home Affairs. The construction and expansion of public TVET institutions was funded by the partnership between the Government and their collaborating partners, notably the European Union.

**Figure 2.2: TVET Botswana National Qualifications Framework**

<table>
<thead>
<tr>
<th>Level 1- apprenticeship</th>
<th>Level 2- College based</th>
<th>Level 3-academic route</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Craft Certificate</td>
<td>BTEP Diploma</td>
<td>Higher Degree</td>
</tr>
<tr>
<td>Trade Test B</td>
<td>BTEP Advanced Certificate</td>
<td>First Degree</td>
</tr>
<tr>
<td>Trade Test C</td>
<td>BTEP Certificate</td>
<td>Botswana General Certificate of Secondary Education (BGCSE)</td>
</tr>
<tr>
<td></td>
<td>BTEP Foundation Certificate</td>
<td></td>
</tr>
</tbody>
</table>

(Adopted from Basupang, 2007, p. 34)

With some of the policy recommendations implemented as discussed above, the extent to which the TVET institutions in the country are meeting the policy objectives is yet to be well researched and fully documented. On the positive, it is noted that among the achievements discussed at length above there is also the development of national standards for vocational qualifications and regulations for provision of vocational training, the use of flexible instructional methods employed in Government Technical Colleges. It is however evident that a lot is yet to be done to ensure the effectiveness of the overall TVET system. This includes the appropriate use of competency based training.
for BTEP and related courses. The appropriate usage of such instructional methodologies would require proper training of TVET Lecturers.

However, after 14 years of the existence of NPVET, it appears that there is limited evidence that the Botswana TVET system has achieved the requisite level of effectiveness. The following section discusses TVET policy borrowing and system reforms.

2.5: Policy borrowing and TVET systems reform

The first part of this section will briefly discuss origins of National Qualifications Framework (NQFs) and how they were adopted across the world as part of TVET reforms. Later, views of experts as they deliberate on successes and failures and how such reforms came about in developing countries of the world including Africa will follow. Consequently, how these reforms are viewed in recipient countries will also be discussed.

There has been much discussion about reforms in TVET systems across the globe which saw the adoption of competency-based training for TVET programs and the establishment of NQFs (Allais, 2012; Chakroun, 2010; Chisholm, 2007; McGrath, 2011; S. McGrath, et al., 2006). Transformation and modernisation of TVET programs by introduction of NQFs were viewed as means to achieve reforms in TVET systems. Chakroun (2010), Chisholm (2007) and Allais (2012) suggest that National Qualification Frameworks originated from Britain in the 1980’s in an attempt to reverse an apparent decline in economic markets. Qualifications were to be derived from an analysis of work functions; assessments were to rely on and reflect workplace practices. The new standards would specify the expectations and requirements of the employers, in terms of expected work performance, expressed as outcomes. Allais (2012) describes the NQF as an attempt by the UK governments to try to:

…link vocational education to the workplace through employer-specified competence statements (p. 639).

Establishment of NQFs then progressed to countries like Australia, Canada and New Zealand. The UK model has been adopted by many countries around the world, with assistance from UK-based agencies and international organisations. The South African; Botswana; Mauritius NQFs; some Asian countries including Australian competency-based training; some in the Caribbean, and labour competence frameworks in Latin
America all drew on the English National Vocational Qualifications (NVQs), and all generally follow the model of engaging stakeholders, particularly employer groups to develop qualifications, which individuals choose from to enhance their employability (Chakroun, 2010; Steiner-Khamsi, 2006). With this view, NQFs are said to give employers and workers organisations a more important role in TVET reforms, especially in developing agreed learning outcomes for qualifications (Chakroun, 2010).

Experts’ views on successes of NQFs differ, some believing that they may achieve little if they are not fit for purpose and if they are not part of a wider TVET strategy (Chakroun, 2010; SADC, 2011; Steiner-Khamsi, 2006). Chakroun (2010) states that:

International trends in introducing NQFs, driven by international organisations, could have implications on the way early starter models are replicated in developing countries…approaches adopted by donors and international organisations are likely to lead to many of the problems related to policy borrowing (p. 201).

In the SADC region, the development of NQFs was to represent a strategic instrument to increase the competitiveness of the sub-region and to further economic and labour market integration (Chisholm, 2007): the early 2000s saw a number of SADC member states formulating NQFs and implementing them by the mid-2000s. Within the region, and arguably internationally, the National Qualifications Framework appears to be a major educational experiment that ultimately had more impact on the discourse than on the practice of education and training; policy intentions, with minor exceptions, did not easily translate equally into practice across all spheres. Chisholm further stated, “These national qualification frameworks were being duplicated with no factual evidence on implementing conditions, costs and on impact” (p. 301). This added to mounting concerns about borrowing and lending training policies between countries (Chakroun, 2010). Chakroun stated that engagement of foreign consultants in enacting NQFs is likely to lead to many problems associated with policy borrowing and discusses why borrowed policies may not be necessarily relevant to address aspirations for which they were adopted for in the first place.

Phillips & Ochs (2003) discussed how foreign examples are often used by policy makers in all stages of the processes in initiating and implementing educational change. They stated four stages involved in borrowing as: “cross-national attraction (impulses and
They discussed these stages as follows:

**Cross-national attraction**: may be sparked by stakeholder dissatisfaction about the overall education and training practice; economic change; innovation in knowledge and skills and political change.

**Decision**: a government might decide to prioritise some/all aspects within the education and training policy. For example, reviewing Botswana TVET policy, the Government emphasised the need to prioritise TVET and distinguish it from general education considering the critical role it could play in contributing to economic advancement of Botswana. With the call for establishing a coordinating body (in this case BOTA) to harmonise TVET, an NQF was introduced that saw the introduction of new forms of pedagogy. Competency based training was advocated for all forms of TVET (Akoojee, 2005; Republic-of-Botswana, 1997b, 2001, 2004, 2008). The NQF in Botswana was modelled on the New Zealand framework (Tabulawa, 2009). The introduction of competency based BTEP through Botswana’s NQF is an example of the decision made by the government to modernise TVET.

**Implementation**: the Government of Botswana has through RNPE and NPVET identified TVET practices in the country to be of poor and uncoordinated quality. A consensus was reached by the government about possible solutions which were introduced and implemented as discussed above. Phillips & Ochs (2003) suggest that adaptation of any foreign model is feasible in this process and it will be subjected to local context of the borrower.

Change might be speedy or long term in nature, depending on the adaptability of the particular policy measure. Given the potential need for revision of complex and well-established procedures (assessment and examination, certification, training arrangements), considerable time might elapse before the impact of new measures is felt (p. 456).

**Internalisation/indigenisation**: in this last stage of borrowing, the policy becomes part of the education and training system of the borrower country, and it is possible to assess its effects on the pre-existing arrangements in the overall education system. Four steps are discussed:
1) Impact on the existing system - this explores the intentions/objectives of the policy makers in regards to the existing system (the focus is on curriculum, assessment, pedagogy and organisation);

2) The absorption of external features - assessment is focused on the local context and the extent to which other features from a new system could be adopted;

3) Synthesis - the discussion addresses the process of aligning and acknowledging that local context influences the understanding and enacting of such borrowed policies;

4) Evaluation - this process requires reflection and evaluation to best distinguish what could work or not, and expectations of borrowing. Findings from such an exercise would inform the next step and further assessments of foreign models to improve where shortcoming were identified (Phillips & Ochs, 2003).

Observers (Phillips & Ochs, 2003; SADC, 2011; Singh, 2001; Watson, 1994) have strongly warned against copying models from target countries to home countries irrespective of similarities and differences between the two. They mentioned the intentions of target country’s views and interpretations of internationalisation of educational practice or policy in the home countries. In summary, massive reforms in educational and TVET systems that swept across the globe in recent years have provided an opportunity for networking between nations. As Steiner-Khams (2006) explain:

…borrowing does not occur because reforms from elsewhere are better, but because the very act of borrowing has a salutary effect on domestic policy conflict. Thus, there must be a window of opportunity or receptiveness towards innovation in the local context for a new reform to resonate (p. 671).

Literature suggests that introduction of Outcomes Based Education (OBE) and Competency Based Training (CBT) in TVET systems across the globe are a result of diffusion and internationalisation of these systems to make them competitive and recognised. Competition and recognition in TVET systems for some continents is yet to be achieved especially in African countries, Europe and some parts of Asia. This is because transformation or reforms in these countries TVET systems are on-going.

2.6: A framework for understanding TVET

Today’s global economy requires changes in human capabilities so that every citizen will be able to participate in their societal and national developments (Kerre, 1998). Emphasis is on training that takes into account the relationship between “work, family, and
community responsibilities and interest” (p. 26). These influences have shaped TVET systems across the globe thus dictating how curriculum should look, how it’s supposed to be taught, who has to teach it, who has to enrol in TVET programs as well as the modes of assessment to measure student learning.

As Rojewski (2009) states, “Desired outcomes are knowledgeable citizens who are vocationally adaptable and self-sufficient, participate in a democratic society and view learning and reacting to change as lifelong processes” (p. 21). This is illustrated in Figure 2.3 below:

**Figure 2.3: TVET conceptual framework (Rojewski, 2009)**

These views have informed reforms in curricula that have resulted in the establishment of vocational standards to meet ever changing workforce demands in the knowledge economies. This saw a shift in training from content-based to a more experiential teaching and learning curriculum. Emphasis is now on the development of fundamental skills (core skills) and key vocational skills which lay the foundation of professional competence and allow adaptability to change in the workplace. The above TVET conceptual framework has been adopted and modified for the current study as illustrated in Figure 2.4 below:

**Figure 2.4: TVET framework for the study**

<table>
<thead>
<tr>
<th>Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Diploma &amp; Advanced Cert and Cert programs;</td>
</tr>
<tr>
<td>Trade Test B and National Craft Certificate</td>
</tr>
<tr>
<td>- Program content</td>
</tr>
<tr>
<td>- Program intended goals and objectives</td>
</tr>
<tr>
<td>- Sustainability of the training program</td>
</tr>
<tr>
<td>- Relevancy to the intended clientele</td>
</tr>
<tr>
<td>- Facilitators/instructors</td>
</tr>
<tr>
<td>- Qualifications and</td>
</tr>
<tr>
<td>- Experience (knowledge of course content, skills &amp; attitudes)</td>
</tr>
<tr>
<td>- Desire to teach</td>
</tr>
<tr>
<td>- Ability to manage their classroom</td>
</tr>
<tr>
<td>- Learner-oriented</td>
</tr>
<tr>
<td>- Staff development</td>
</tr>
</tbody>
</table>
Adapted from Rojewski (2009)

The framework articulates important areas within TVET and their relationship. It is predicated on the view that modern TVET is associated with the definition of the new economy in preparation of highly skilled and knowledgeable workers. It is therefore with this view that TVET is believed to be a catalyst in ‘human capital development’ that can be effective in promoting socioeconomic progress (Wallenborn, 2010).

The focus of the framework is on five areas considered critical for effective TVET; curriculum, instruction/delivery options, student assessment, clientele and program evaluation. The relationship between these areas is illustrated in a way that defines new TVET. Rojewski (2009)’s notion of learners as active participants in their learning process as well as changing roles of teachers/trainers as facilitators of knowledge and lifelong learning is imperative. For new innovations such as new forms of pedagogy and assessments of learners; competency need to be employed. It touches on mechanisms to be put in place to prepare TVET practitioners for such differing roles so as to thoroughly execute their roles effectively inside the classroom and work-based settings.
With globalisation dictating the direction of TVET, managers and policy makers are faced with challenges of understanding, adequately preparing learners and supporting TVET practitioners to be better placed so as to make sense of the world they live in. This has had an effect on people's lives as work conditions have changed thus having impact on individuals' social responsibilities. With globalisation as the driving force, Rojewski (2009) has observed the following:

1) Highly-skilled and educated workers will replace manual workers in the workplaces;
2) Competition between producers of goods and services have toughened with the ‘best for less’ products than mass production;
3) Continuous training for the new and existing workers to remain competitive in different workplace settings.

Workplace practices have been re-defined by the new global economy. Possession of certain key skills is of utmost importance for all workers. These skills include personal and interpersonal skills, ICT literacy as well as cognitive skills. This:

...is influencing the methods of instructional delivery and types of learning most desirable. Two consequences of this are, first, a shift in teaching methodologies away from the transfer of facts to students as passive recipients and, instead, towards teaching students how to learn and instilling in them the curiosity to do so. In short, how people learn is becoming as important as what they learn. The second consequence is observable in high-tech firms exposed to fast-paced competition. The ability to learn, to transform existing knowledge into new knowledge is a source of competitive advantage of increasing significance (p. 24).

With this positive view, the efforts by those involved in TVET are directed towards making the system more relevant, efficient, sustainable and effective. Moreover, Rojewski (2009) has also noted beliefs that are associated with administration and implementation of TVET. He observed that:

1) TVET is trusted with refurbishing the already employable skills individuals have with prospects of continuous learning for persons to be active and responsible citizens within the societies they live in. It should therefore be designed in such a way that is inclusive of all core-skills rather than focussing on job-specific skills;
2) It must be flexible in nature to accommodate changing roles in people’ lives. TVET design must therefore be reflective of general work related practices with opportunities for professional development;
3) TVET should be designed and addressed in such a way that it is in accordance with the long-term needs of successful economic and social development of individuals.

It is important therefore to take stock of important issues related to local context in regards to education, economic environment as well as employment opportunities so as to improve TVET systems and programs and further make them more relevant and sustainable. The World Bank (2001) and Hobart (1998) acknowledge challenges brought about by the new TVET paradigm to most countries. They assert that due to the ever changing world of work and fast pace of information, communications and technology, TVET managers are now faced with challenges of training learners who are versatile and can easily adapt to ever changing demands in the labour market.

Conclusive results in terms of good or bad practice can only be derived from existing data. The extent to which these attempts are measured is through learners’ workplace readiness in areas such as communication, problem solving, critical thinking, safety, ethics, systems and leadership. It is therefore with this view that TVET is believed to be a catalyst in ‘human capital development’ that can be effective in promoting socioeconomic progress (Wallenborn, 2010).

The choice for this framework, Rojewski (2009), is based on the fact that it is designed in guiding effective secondary and post-secondary TVET. Other frameworks; (Gray & Paryono, 2004; Sidiga & Washi, 2004) were also considered. They were however rejected on the basis that their models are set on economic context and focus on the entire workforce education and development starting from elementary/primary level up to tertiary level. Different players within the two frameworks were extensively analysed and discussed by these observers. Gray & Paryono (2004) discuss that various factors that contribute to the system included the “government, physical environment, human capital, social capital and economic status” (p. 22) of a particular country and how each of these factors feed one another for an effective system. Within each of these factors, there are determining variables in terms of what is more applicable for individual countries. Another point of contention expressed by these observers was set in the context of comparative workforce education and development and strongly indicated ‘policy borrowing’ in developing countries from developed countries as one of the weakest
practices that has led to failures by many systems. Although these are important factors to consider for evaluating TVET, they are however outside the scope of this study.

Rojewski’s (2009) was strongly influenced by his study in 2002 (Rojewski, 2002) and the Lynch in 2000 (Lynch, 2000). TVET experts discussed TVET in view of Dewey’s notion of teaching and learning where TVET is viewed not as training for specific jobs but rather for a person’s entire work life. They view TVET as a mechanism that is suited to produce graduates who, at the end of their training would become adaptable to meet ever changing labour market conditions. This view describes TVET as a means to prepare learners for work life. The notion rejects learners as spectators but views them as explorers and active participants in construction of new knowledge. This philosophy is associated with the pragmatist theory of learning which is regarded as the most dominant in the field of TVET to date (Rojewski, 2002, 2009).

Botswana has implemented TVET strategies not dissimilar to those that have been introduced in a number of other countries. The conceptual framework discussed above will be used as a guide in achieving the aims of this study. It is now the intent to move from the conceptual framework, and to discuss the processes that can be used to evaluate TVET policies and their outcomes.

2.7: Understanding the perceptions of TVET systems

In a UNESCO conference held in Mona, Pierre (2012) viewed perception in general as:

The process of receiving information about and making sense of the world around us. It involves deciding which information to notice, how to categorize this information and how to interpret it within the framework of existing knowledge…. and all other variables which contribute to economic development (p. 6).

This definition fits well with this study as it encompasses a range of important stakeholder views within the system. As a transition economy, the key challenge for Botswana’s TVET system is producing a highly skilled labour force that is responsive to the changing demands of the world of work.

In this study, the perception of TVET in Botswana will be measured across stakeholder groups. Perception is therefore defined as the stakeholders’ view of TVET given that they have information and knowledge of the system, Hence, perception of Botswana TVET refers to stakeholders’ views with regards to the system, following the implementation of
the latest Government strategies, and how well Government strategy is faring in delivering systemic TVET goals.

2.8: Measuring TVET effectiveness

Building and nurturing a competitive workforce is an aim of many countries. This is being achieved through education systems that are globally competitive and recognised (Ducci, 1998; Foster, 2007). The key areas of interest are learning processes, teaching and learning media, transfer of skills and return on investment, among others. The new focus emphasises that TVET is seen as a vehicle for achievement of goals in changing people’s life thus increasing individual accountability and responsiveness. Wallenborn (2010) observes “the growth, employability and productivity of individuals and enterprises all require up-to-date work-related competences rather than more general educational achievements,” (p. 181).

Conclusive results in system effectiveness can only be derived from measuring existing data. The key measurable factors are the learners’ workplace readiness in areas such as communication, problem solving, critical thinking, safety, ethics, systems and leadership as well as the skills and underpinning knowledge to do the job as further stated by Wallenborn. It is therefore with this view that TVET is believed to be a catalyst in ‘human capital development’ that can be effective in promoting socioeconomic progress (Wallenborn, 2010). Fretwell (2007) likened an effective TVET system to Kirkpatrick’s evaluation model:

First, to determine to what extent it is meeting currently expressed goals and second, to determine if it is meeting the emerging goals, which may not yet be expressed in law and regulation. And if so, how should the existing laws, regulations, and policies be changed to increase the effectiveness of TVET (p.66).

Since there is very limited data and research on the successes or otherwise of Botswana’s current TVET system, the effectiveness of mechanisms in place and relevance of training to meet labour market demands are at the moment subject to in-depth investigation in Botswana. This study would therefore contribute to literature on the Botswana TVET system and its effectiveness. The specific objective of the study is to find out how successful RNPE (1994) and NPVET (1997) have been in encouraging a market-led TVET system that meets Botswana’s economic and society demands, by seeking stakeholder perceptions of the matter.
In this study, the effectiveness of the TVET system in Botswana is defined as stakeholder perceptions of how well the system strategies put in place by the Government are delivering against the TVET goals. To understand the context of these strategies and goals, it is essential to review some of the context of educational development in Botswana, which now follows.

**2.9: Evaluation of TVET policies, strategies and system outcomes**

In relation to the evaluation of TVET policies and strategies, Deitmer & Heinmann (2009) and Fretwell (2007) note that it is the organisation of the TVET system itself which usually influences the evaluation designs to be employed. A well-defined TVET policy is of outmost importance, as Fretwell emphasises. The latter observed that without a well-defined TVET policy, it is impossible to carry out an evaluation because the exercise has to be based on the existing objectives. Observers are however aware of the different organisational structures in different countries in regards to their TVET target markets. They note that, one structure might favour on-the-job-training while another favours school-based training in terms of roles and responsibilities. Training on-the-job is often in alignment with the organisational mission and vision statements of the enterprise as well as the purposes and need for such training to be offered. There is also interest in how knowledge is gained, how the knowledge gained fit into the organisational mission and vision statements, assessment methodologies used during training, relevancy and application of the knowledge gained to the job.

The crucial area in an evaluation is at the initial stage where target markets for TVET are defined. For the identified group, the applicability of their pre-existing knowledge from general education to the intended training design could be established thus forming the foundation for specific occupations. At the same time, an analysis of efforts by relevant bodies in regards to publicly educating this cohort about TVET career opportunities could be established, at system level. Consideration is also to be given to the availability of resources (both material and human) for successful implementation and administration of the systems. When focussing on training to meet labour market demand, it is stated that evaluation can focus on individuals where assessment of knowledge acquired and its relevance to the labour market needs and how that relates well with the market value and belief systems is to be established. At the systems level, focus should be on processes.
used to attract people or experts into the labour market who understand the systems and thus possibly assisting with the curriculum design in trying to relate it to the market/industry needs, (Deitmer & Heinemann, 2009; Fretwell, 2007).

Fretwell advises that to make TVET more effective and hence more relevant, the existing legislation must be carefully scrutinised. By so doing, it is stated that it could enable persons within the system to familiarise themselves with the current objectives. However, Fretwell warns against evaluation based entirely on existing laws, regulations and policies by stating that, such a practice could overlook very important aspects like informal methods of training and other reasons for the intended evaluation to take place. The reasons for evaluation as stated could be aimed at establishing; the extent to which the current goals are being met and addressed; whether new goals as they emerge are being addressed ‘which may not yet be expressed in the law and legislation’. And if so, whether there are possibilities of them being included in the existing laws and regulations for TVET effectiveness. Policy Evaluation will be critically analysed in accordance with current literature in regards to addressing issues such as accessibilities of training opportunities, transfer between programs and gender issues.

With Botswana Technical Education Programs (BTEP) in existence since 2001, it is important to establish the extent at which these programs are responding to global influences and pressures. Moreover, the analysis of the programs goals and objectives in accordance with the NPVET will be carried out. The above discussion highlights critical aspects of TVET policy and strategic outcomes, which need to be understood to undertake a large-scale program evaluation, a discussion of which follows.

2.10: Evaluation of TVET programs

It is now the intent to discuss the evaluation of TVET programs, which are developed from TVET policies and strategies, as discussed in the previous section. Program evaluation is a comprehensive way of establishing the extent to which program goals/objectives are met (Zinovieff, 2008). It identifies areas where projects are effective, as well as where they need attention, thus redefining practice by indicating the merit of some current actions and suggesting corrective measures for improvement of others. Its use can be traced back to the 1960s where evaluation was used as a means to assess significance as a part of ‘systematic inquiry’ resulting from development of procedural
methods that put emphasis on stakeholder involvement and utilisation of set standards (Mertens, 2010). The latter defines evaluation as:

> a selective exercise that attempts to systematically and objectively assess progress towards and the achievement of an outcome. Evaluation is not a one-time event, but an exercise involving assessments of differing scope and depth carried out at several points in time in response to evolving needs for evaluative knowledge and learning during the effort to achieve an outcome (p. 51).

It is therefore important to place great emphasis on availability of resources (both human and material) for effective and efficient running of the systems, the timing, and the need for such training systems to be in place (Darussalam, 2010; Kirkpatrick & Kirkpatrick, 2009; Morgan, 2008; Zinovieff, 2008). Different forms are therefore to be carefully selected and applied for successful completion of this exercise. It is stated that, this form of inquiry is commonly used in education, health and social work. Mertens (2010); Darussalam (2010); Menix (2007) and Morgan (2008) discuss these forms of evaluation as summative and formative. Summative evaluation is said to be an exercise carried out at the end of a training program to determine the strengths and areas needing improvement. Formative evaluation on the other hand is concerned with working on the areas of improvement while the program is still running. Morgan (2008) and Menix (2007) discuss formative evaluation as an adjustment exercise to the current running of programs. This is concerned with assisting education systems to attend to areas that might hinder successful accomplishment of goals and objectives during the implementation of programs. Zinovieff (2008) adds confirmative, meta, goal-based, process-based and outcomes-based evaluations as other forms of evaluation. Confirmative evaluation is likened to Kirkpatrick’s four levels in that:

> Training practitioner collects, analyses, and interprets data related to behaviour, accomplishment, and results in order to determine the continuing competence of learners or the continuing effectiveness of instructional materials and to verify the continuous quality improvement of education and training programs (p. 8).

Meta evaluation is comprised of elements of formative, summative and confirmative evaluation, in that it evaluates all the processes of evaluation conducted. It aims at validating the evaluation inputs, process, outputs and outcomes. In a way, it is a learning process for the evaluators and is likened to action research cycle (plan an experience or action; implement the strategic plan; observe action, including an evaluation of the whole
action and research process, which may lead to the identification of a new problem or problems and, hence, a new cycle of planning, acting, observing and reflecting) which ultimately result in action learning: learning from concrete experience and critical reflection on that experience, through discussions, trial and error, discovery and learning from one another (Zuber-Skenitt, 1993).

Evaluation in general is therefore understood to be an effective tool in determining program effectiveness and accountability (Musal et al., 2008), hence it is imperative to take note of other variables that contribute to effective processes of teaching and learning. These variables, as Kirkpatrick & Kirkpatrick (2009) conceptualise, include: needs assessment, determining goals and performance objectives, determining course content, set the performance standards, identifying the clientele, determine duration of the training program, identifying suitable training facilities, identify suitable/qualified instructors, identify teaching and learning media.

To further reiterate Kirkpatrick & Kirkpatricks’ observation, Menix (2007) states:

More organizations see higher and TVET education as an investment and not just an indirect cost of doing business, they expect educators to show linkages between education and training, staff or organizational performance and improvement, and educational goals (p. 201).

As a process evaluation therefore engages in assessing the extent at which the intended learning and other outcomes are achieved (Musal, et al., 2008; Zinovieff, 2008). The purpose of such an exercise may include; justifying the existence of a training program, reviewing a program, gathering information for decision making purposes, to measure the effectiveness of a program (Kirkpatrick & Kirkpatrick, 2009; Menix, 2007).

Brewer, Peters, Cummins, & Kindall (2007) and Zinovieff (2008) discuss Outcomes-Based Evaluation (OBE) as a method which critically analyses the departmental mission/vision statements and how they translate into program aims and goals and its intended clientele. The method also considers the program effectiveness, learner satisfaction, equity, efficiency as well as policy effectiveness. Its main concern as stated, is about establishing the effectiveness of the program in regards to meeting the needs of the intended clientele and providing accountability information to all relevant stakeholders.
This model comprises of four evaluation methods which are program evaluation, effectiveness evaluation, impact evaluation and policy evaluation (Brewer, et al., 2007). These aspects of the evaluation when performed efficiently feed into each to provide favourable results. Program evaluation critically examines the organisational as well as individuals’ performance outcomes as well as value outcomes. It is explained that organisational outcomes take into account the existing personnel and their characteristics whereas individual outcomes focus on individual preferences, abilities and their beliefs/values. All this information is useful to this study as it will provide insights in determining whether BTEP level programs are in accordance with DTVET mission vision statements in provision of training and how all this information aligns to Botswana TVET policy. This information will also provide useful information in ascertaining transitions between programs.

Effectiveness evaluation attempts to investigate the extent at which the programs on offer are in accordance with the organisational key result (performance) areas. It’s an ongoing activity which provides valuable information regarding areas needing improvement. And at the same time, it will aid the investigation in determining how well the program activities are effective in meeting the learners’ needs. As further discussed, it investigates the extent at which the available resources are maintained and sustained. Impact evaluation on the other hand aims at comparing similar programs in regards to establishing program performance between the programs. For the purpose of this study, impact evaluation will not be considered because of the time constraints. The last area of the model is policy evaluation. Schalock (2001) cited by Brewer, et al., (2007) discusses that policy evaluation examines “equity, efficiency, or effectiveness of policy outcomes for a program” (p. 99). It critically analyses the policy objectives and its performance indicators. It is explained that its aim is to establish the relationship between the policy and the program goals and intentions. This evaluation is often used for feedback purposes to enhance performance and improve responsiveness to all stakeholders as concluded. One of the many reason for inclusion of policy evaluation is to aid the investigation in tackling gender issues as well as how these issues have been dealt with across TVET provision in the country as well training accessibility in all six government technical colleges.
An overview of different types of evaluation given above; formative, summative, confirmative, meta, goal-based, process-based and outcomes-based and their components enlightened on; what each type of evaluation is, how it’s done; when it’s done; where it’s done and why it’s done. Answers to these as well as emphasis on how and why the process of evaluation is done had prompted the researcher to adopt for outcomes-based evaluation. Further summary by Brewer, et al., (2007) highlighted outcomes-based evaluation as a process which critically examines the benefits of the program’s intended goals to the learners as well as the assessing learners’ satisfaction since the start of training. The benefits include, “increased knowledge, changes in attitude, learned skills and changes in attitude changes in condition” (p. 84). This is yet another justification which informed the choice of this type of evaluation for this study.

2.11: Summary of Chapter 2
This Chapter reviewed the literature related to this research study, a stakeholder-perception driven evaluation of the Botswana TVET system. An overview of global TVET reform indicated that many countries are reviewing TVET policies and strategies to improve labour markets and workforce productivity. Following this, sections on TVET in Africa and the context of TVET in Botswana generate a paradigm in which to understand the present workings of the Botswana TVET system.

A section on the development of TVET in Botswana gave a historical perspective on the Government policy making that led to the present TVET system. Following was the development of a conceptual framework to guide this research. This was then supported by a discussion of the underpinning concepts of perception and effectiveness, as they relate to evaluative research on TVET systems. Literature was then reviewed on the evaluation of TVET policies and the strategies that follow from the policies, and the approaches that could be used for program evaluation in TVET.
Chapter 3: Research Methodology

3: Overview of the chapter

3.1: Research objective

The objective of the present study is to examine stakeholder perceptions of outcomes of the implementation of the Revised National Policy on Education (RNPE) and National Policy on Vocational Education and Training (NPVET), in encouraging a market-led TVET system that meets Botswana’s economic and social demands as captured in chapter 1; section 1.7. The study therefore aims to present a framework for developing an agenda for change and reform in the TVET system which is stakeholder driven. As a result, the following research questions have therefore been identified:

1) How do stakeholders perceive current TVET practices in Botswana?
2) To what extent do they perceive the current TVET practices to be effective?
3) In what ways do they perceive the system could be made more effective?
4) How do the interactions between different stakeholder groups influence current TVET practices in Botswana?
5) What impact does the interaction between TVET sectors in Botswana have on their relative effectiveness?

This chapter therefore specifies the procedures undertaken to conduct the study. The instruments used were adopted from the Tracer Study on the Employment Outcomes of the Vocational Training Graduates (Bolaane, et al., 2010), so this chapter includes information on samples from that study as background to the present project.

The chapter also outlines the research objectives for the present study and the methodological and research designs used. It then touches on the research plan; the framework for conducting the research and the questionnaire design and administration during this study. Ethics approval processes undertaken to carry out the research project are also outlined in this chapter. Information is given on the main research components and where in the study these components are detailed. Mixed method design will also be considered as this research uses the mixed approach.
3.2: The methodology and research design

To execute the study, literature on research strategies were reviewed with a view to determine the most appropriate methods. Quantitative and qualitative methodologies arise from different views of reality and therefore choice of method comes from the researcher’s prior conceptualisation of the research objectives (Cohen, Manion, & Morrison, 2007; Creswell & Plano Clark, 2007). Quantitative and qualitative methods may be seen as attempts to answer different questions: “How do things compare?” calls for a quantitative approach and “What is this thing like?” calls for a qualitative approach. Mixed methods are an attempt to build a more complete picture of the focus of research by drawing on both approaches for the same sample, to implement triangulation, which increases the validity and reliability of the findings (Creswell, 2008, 2012; Creswell & Plano Clark, 2011).

3.2.1: Mixed methods study design

Creswell & Plano Clark (2007) have detailed four distinct types commonly used in mixed methods research as triangulation, the embedded, the explanatory and the exploratory designs. Each of these designs has distinguishing features which highlight procedures involved during research and each can be further divided into sub-types.

Triangulation is often used when the researchers want to expand their understanding of the research problems by collecting and converging two types of data. The two sets of data are collected simultaneously but separately then followed up by bringing together different results “in the interpretation or by transforming data to facilitate integrating the two data types during the analysis” (p. 64). Creswell (2012) highlights the distinguishing factor for the embedded design by stating that “one form of data play a supportive role to the other form of data” (p. 544). It is further explained that such an approach (collecting the second form of data) is used to either support or negate the first form of data. One type of data is embedded within another type, that is, qualitative data within quantitative methodology or vice versa. It is commonly associated with correlational and experimental research where the two sets of data are collected and compared to determine the relationship between the responses from different sample groups. In the explanatory design, one form of data enables the researcher to further understand another type in that it helps explain or elaborate further the type of data that has already been analysed (Creswell & Plano Clark, 2007). Exploratory design is often used at the initial stage of
research when there is need to develop and test an instrument because it does not exist at that time. It could also be used to identify important themes within qualitative data to investigate possible quantitative variables (Creswell & Plano Clark, 2007).

3.2.1.2: Choice for the design study and rationale

In the triangulation design the use of one method of research is used to off-set the weaknesses of the other method: that is, any identifiable flaws within quantitative methods are compensated by the use of qualitative method. Each method is used to cross-validate the other. As Creswell & Plano Clark (2007) state, the two sets of data are collected simultaneously but separately then followed by bringing together different results “in the interpretation or by transforming data to facilitate integrating the two data types during the analysis” (p. 64).

Creswell & Plano Clark (2007, 2011) describe the four alternative models within this design as; the convergence, the data transformation, the validating quantitative data and the multilevel. The convergence model involves the collection of both quantitative and qualitative data separately but at the same time. Data collected is then analysed separately and the results are compared against one another. It is often the qualitative results which are used to confirm and validate quantitative results (Creswell & Plano Clark, 2007). In a transformation model, the two sets of data are collected at different times. After the preliminary analysis, one type of data is converted into the other type: that is, quantitative results may be converted to qualitative data or vice versa. As stated, “this transformation allows the data to be mixed during the analysis stage and facilitates the comparison, interrelation, and further analysis of the two data sets” (p. 65). In the validating quantitative data model free or open response items are included in the survey to further explain and get more information that cannot be derived by quantitative data. The attraction of this model is that the free responses can be used to strengthen the quantitative survey findings (Creswell, 2008, 2012). The last model is that of multilevel research. This involves using different research approaches to speak to diverse ranks within an organization. Results from each rank are combined together in the overall analysis and conclusion.

This study therefore employed both qualitative and quantitative research approaches. Nested concurrent design was used for both the quantitative and qualitative components of this study. Quantitative and qualitative data was collected at approximately the same
time with the qualitative sample being the subset of quantitative data (Johnson & Christensen, 2012). Creswell (2008) states that the use of both approaches gives better results than the use of either approach singularly in that each approach can validate the other’s outcomes. In view of the above discussion, concurrent procedures have been chosen for this research.

In summary, surveys were used for TVET Learners, TVET Lecturers and industry/employers, whereas interviews were used for senior government officials. Findings from the participants will be merged together in the overall interpretation. In this study, the overall quantitative and qualitative components had equal status within the design in that they were all given the same attention during the data collection phase. Below is the summary of the research plan adopted for this study.

3.3: Sampling design and sample size
The stakeholder population included TVET Learners, TVET Lecturers and administrators in four government technical colleges and four brigades. The other stakeholders are government policy makers and employers. The industries/employers surveyed were from the tourism and hospitality, construction, engineering, business and ICT industries. The learner population included the students studying Advanced Certificate and Diploma from the Botswana Technical Education Programs’ (BTEP) in four government technical colleges and National Craft Certificate (NCC) and Trade Test B in four Botswana Brigades. The choice of these BTEP qualifications was because they are the highest level courses within the BTEP framework. Learners from these programs are assumed to have acquired employable skills from both institution-based and industrial experience. NCC and Trade Test B were covered in this study for the same reasons. These programs were in existence before the introduction of modernised BTEP in 2000.

Another target population was TVET Lecturers in all government technical colleges and brigades. From a total population of one thousand two hundred and sixty seven (1,267) trainers in all TVET institutions, a sample was taken from eight institutions (4 Technical Colleges and 4 Brigades). These are the trainers in all the colleges identified for this study. A similar strategy was used to identify employers in the country.
About 400 questionnaires were returned from all participating TVET institutions and the employers participating in the study. About 6 industry/employer questionnaires were returned out of the 30 which was sent out. A sample of 316 TVET learners (from BTEP and Trade tests across eight TVET institutions), 84 TVET Lecturers and 6 employers participated in the study. The target learner population was the final years in BTEP Diploma, Advanced Certificate and Certificate and Trade Test B and National Craft Certificate courses in all forty nine (49) TVET colleges and brigades in the country.

The number of learner, lecturer and employer participants was not the same across institutions. Some research sites (colleges and employers) provided more responses than others. This is due to the fact that some colleges had more learners and resources compared to others. As for the employers, Botswana has a very small industry base which could have contributed to low response rate.

3.4: Research plan

A summary of data collection procedure is outlined in Table 3.1 below:

**Table 3.1: Summary of data collection procedure**

<table>
<thead>
<tr>
<th>Data type</th>
<th>Procedure</th>
<th>Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative data</td>
<td>• Questionnaires/surveys</td>
<td>• TVET Lecturers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• TVET Learners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Employers</td>
</tr>
<tr>
<td>Qualitative data</td>
<td>• Oral Interviews</td>
<td>• Government officials</td>
</tr>
<tr>
<td></td>
<td>• Free open responses from surveys</td>
<td>• TVET Lecturers</td>
</tr>
<tr>
<td></td>
<td>• Government documents</td>
<td>• TVET Learners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Employers</td>
</tr>
</tbody>
</table>

Surveys were used to ascertain the views of the key stakeholder groups TVET Learners, instructors/facilitators and industry/employers. Open-ended questions in the surveys, interviews of senior officials within the Ministry of Education & Skills Development and Ministry of Labour & Home Affairs, and analysis of Government reports and documents enabled the researcher to gain an in-depth insight of the Botswana TVET system and hence to answer the five research questions.

**Table 3.2: Framework for data collection**
<table>
<thead>
<tr>
<th>Research Question</th>
<th>Source of Data</th>
<th>Type of Data</th>
<th>Analysis of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) How do stakeholders perceive current TVET practices in Botswana?</td>
<td><strong>Surveys</strong> of Lecturers, Learners, Senior government officials at DTVET, Director DTVET, and Policy makers at the Ministry of Education &amp; Skills Development and at Ministry of Labour &amp; Home Affairs. Also representatives from peak industry/employer groups. The survey contains both Likert scales and open free response items.</td>
<td>Participant background details. Frequencies of participant responses to Likert scales. Written responses to open-ended questions. Written recommendations from participants as to how the effectiveness of TVET systems could be improved.</td>
<td>Divide sample by background group and compare the frequencies of responses from groups of participants. (Quantitative analysis by SPSS). Qualitative analysis - Isolate themes and patterns of themes that characterise different participant groups. (Code Qualitative responses to the open ended items and look for patterns in the coding: NVivo)</td>
</tr>
<tr>
<td>2) To what extent do they perceive the current TVET practice to be effective?</td>
<td>As above</td>
<td>As above</td>
<td>As above</td>
</tr>
<tr>
<td>3) In what ways do they perceive the system could be made more effective?</td>
<td>As above</td>
<td>As above</td>
<td>As above</td>
</tr>
<tr>
<td>4) How do the interactions between different stakeholder groups influence current TVET practices in Botswana?</td>
<td><strong>Interviews</strong> with senior TVET policy makers based on concerns that emerged from the survey.</td>
<td>Elaboration of stakeholder concerns and recommendations regarding TVET in Botswana</td>
<td>Transcribe the interviews. Isolate themes and patterns of themes that characterise different interview participants. (NVivo).</td>
</tr>
<tr>
<td>5) What impact does the interaction between TVET sectors in Botswana have on their relative effectiveness?</td>
<td><strong>Surveys.</strong> Government documents</td>
<td>Frequency of similar written responses. Graduation rates. Employment rates.</td>
<td>Correlate quantitative data using SPSS. Document analysis</td>
</tr>
</tbody>
</table>

The sets of data were collected to compare mean responses from different stakeholder sample groups. Quantitative data from questionnaires are represented in the form of tables, charts and graphs. TVET Learner and Lecturer questionnaires contain closed and open-ended questions. The commonly used Statistical Program for Social Sciences (SPSS) (Field, 2009; Pallant, 2011) was used to analyse quantitative data. For purposes of qualitative data analysis, themes and patterns emerging from the free responses to open-ended questions from different sample groups were isolated and coded. Interview responses from senior government officials were also gathered. This enabled the researcher to isolate themes that characterise different groups. The framework for data collection is represented in the Table 3.2, above.
3.5: The main research and data analysis

The integration of quantitative and qualitative dimensions of this study was by the use of concurrent triangulation strategy in which the survey was administered at the same time as interviews. The main research was conducted from November 2012 to August 2013. For quantitative data analysis, the data were organized, synthesized, and analysed with the Statistical Program for Social Sciences (SPSS) package. At the preliminary stage of data analysis, descriptive statistics were used to understand the general characteristics of the sample group followed by inferential statistics for more in-depth explorations of the data.

The NVivo software package was used to group, identify themes in the qualitative data. With regards to addressing thematic and analytic coding categories, NVivo has three key interactive systems, namely, the system part, the document system, and the node system. The document system refers to the location where the new documents (such as transcripts) are added, grouped, and edited into sets. The node system was employed for undertaking coding analysis. The last tool allows the researcher to search through either documents or nodes when doing the analysis. In short, the document system is used to store and manage the raw data, which are then hierarchically and thematically grouped in the node system. The tool system is a means of storing data sets by which the researcher can analyse or evaluate the data. It is necessary to note that every data analysis tool is just a means to help in interpreting and analysing the research findings. However, depending on the nature and characteristics of the data, different statistical tools have to be used for different purposes.

Findings from the data analysis of the 4 stakeholder groups were then aggregated to obtain a consolidated view of the efficiency and effectiveness of the national Botswana TVET system.

3.6: A conceptual framework for conducting the research

A conceptual framework for this study was discussed in chapter 2.5 (Figure 2.3). A number of critical areas were extracted from literature in relation to the main research focus on TVET in Botswana. These areas, how they are addressed in the study and their importance as extracted from the literature, are listed in Table 3.3 below:
## Table 3.3: Critical areas identified in literature

<table>
<thead>
<tr>
<th>Critical areas</th>
<th>How they are addressed in the study</th>
<th>Their importance as ascertained by the literature</th>
</tr>
</thead>
</table>
| 1) Curriculum           | • Botswana Technical Education Program (BTEP) Diploma & Certificate  
• Trade tests  
• Facilitator experience & morale | • BTEP curricula-to uplift the status of TVET in Botswana by exposing Learners to the use of modern technology and promotion of lifelong learning, through multiple entry and exit points, and recognition of prior learning (RPL).  
• Trade tests existed before the modernised BTEP  
• Facilitator morale & experience is a crucial factor which plays a very influential role in student learning |
| 2) Delivery/instruction options | • The use of modern pedagogies | • Provision of opportunities to expose Learners for exploration of different learning modes and experiences |
| 3) Student assessment   | • The use of competency/outcomes based assessments | • The quality assurance mechanisms in place and the extent to which they are validated and reliably used in accordance with mission and vision statements |
| 4) Clientele            | • Learners  
• Motivation for study  
• Program satisfaction | • Enrolments in all selected courses & learner characteristics, motivation for study, satisfaction for choice with study and attendance are factors that contribute to enhanced learning. |

### 3.6.1 TVET Curricula

TVET qualifications from the Government program relating to skills development (Botswana Technical Education Programs, BTEP) were used as a key component of this research. This is because they were developed to fit the paradigm of modern TVET (that is, competency-based and assessed, linked to the industry need). National Craft Certificate (NCC) and Trade Test B are covered in this study for comparison purposes. These programs were in existence before the introduction of modernised BTEP in 2000.

The researcher therefore investigated stakeholder involvement in the process of curriculum design and development for all the courses under investigation. An analysis of the results provided valuable information regarding program content, program goals and relevancy to the intended population. Table 3.4 below illustrates the TVET courses covered in this study:
Table 3.4: TVET programs covered in the study

<table>
<thead>
<tr>
<th>BTEP level courses</th>
<th>Mode of facilitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Diploma</td>
<td>modular and competency-based</td>
</tr>
<tr>
<td>• Advanced Certificate</td>
<td></td>
</tr>
<tr>
<td>• Certificate</td>
<td></td>
</tr>
<tr>
<td>Electrical and Mechanical Engineering, Business Studies, Hospitality and Tourism, ICT Courses)</td>
<td></td>
</tr>
<tr>
<td>Technician/Apprentice courses</td>
<td>traditional mode</td>
</tr>
<tr>
<td>• National Craft Certificate</td>
<td></td>
</tr>
<tr>
<td>• Trade Test B</td>
<td></td>
</tr>
<tr>
<td>Electrical and Mechanical Engineering, Business Studies, Hospitality and Tourism, ICT Courses)</td>
<td></td>
</tr>
</tbody>
</table>

Reference is made to the framework adopted for this study in chapter 2 (Figure 2.3 and 2.4). A brief outline is given below as to how it was addressed in this study. Sub-sections below were extracted from the cells of framework adopted for this study (see Figure 2.4). They have been referred to as sections of the TVET Learners and Lecturers surveys (Appendix C and D) respectively. For the analysis of results for these sub-sections, see chapter 4 (sections 4.3.2 to 4.11 for TVET Learners and 4.12 to 4.14 for TVET Lecturers). Brief summaries of how these boxes of the framework were addressed in this study are given below.

3.6.2: Instruction/delivery options

Instruction/delivery options explored learning opportunities and experiences available within the BTEP framework and Trade Testing as captured in the framework for this study (Figure 2.4). An investigation into the extent to which learners are exposed to work-based learning in conjunction with classroom teaching was carried out. This was addressed as section E (5) of TVET Learners’ survey (Appendix B) and section 4 of TVET Lecturers’ survey (Appendix C). For analysis of results to this enquiry, see chapter 4: section 4.5 from TVET Learners’ survey data and section 4.12.6 from TVET Lecturers’ survey data. Delivery options were also analysed qualitatively in chapter 5 (see section 5.3.3 on analysis of TVET Learners’ qualitative data and 5.6.4 on TVET Lecturers qualitative data).
3.6.3: Student assessment
As part of the framework adopted for this study (Figure 2.4), the extent to which valid and reliable student assessments are used in accordance with mission and vision statements was critically analysed. Student assessment was captured in items 22 of section 5 and 32 in section 7 of TVET Learners’ survey and in items 21, 23 in section 4; items 30 of TVET Lecturers’ survey. Student assessment was also addressed in chapter 5 (see section 5.3.3 on the analysis of the TVET Learners’ qualitative data and 5.4.1.2 and 5.5.1 to 5.5.4 on the analysis of TVET Lecturers’ qualitative data). Consistency, application and understanding of these forms of assessment was critically analysed across all the departments in selected Technical Colleges and Brigades as captured in chapter 4 (see sections 4.5 from TVET Learners’ survey data and section 4.12.6 from TVET Lecturers’ survey data).

3.6.4: TVET Learners
Enrolments in all selected courses were analysed. Although BNQF has a broad range of qualifications, only TVET Levels 1 and 2 were covered as Level 3 TVET (other qualifications) is beyond the scope of this study as it is offered by the University of Botswana and other institutions of higher learning (see chapter 2: Figure 2. 2).

As part of the framework (Figure 2.4) for this study, this was covered as section 1 under demographic information in TVET Learners’ survey. This has provided insights as well as much needed information regarding the governments’ attempt to attract and retain high student enrolment in TVET colleges. For this study, such an inclusion has provided insights in gauging stakeholder perceptions towards TVET effectiveness in Botswana. Analysis to this part of the framework was captured in chapter 4 (see section 4.3.1, Table 4.3).

3.6.5: Lecturer morale
Lecturer morale is another factor which is very influential in student learning (Friedrichsen et al., 2009; Mackenzie, 2007). This study has also solicited information about facilitator morale in attempting to provide recommendations that are suggested. It was covered in TVET Lecturers’ survey under section 6 (job satisfaction).
3.7: Areas of industry specialisation and the type of TVET Institutions they are offered in

From the data gathered for this study, cross tabulation was carried out to establish which of the courses are offered in Brigades and Technical colleges (see chapter 1, section 1.3 for the distinction between the two types of institutions). The following Table 3.5 gives the 12 areas of industry specialisation, the type of TVET institution and the qualifications offered:

**Table 3.5: Areas of specialisation and the type of college they are offered**

<table>
<thead>
<tr>
<th>Areas of specialisation</th>
<th>Type of TVET institution offering the program</th>
<th>Levels offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction trades, craft, trade and industrial</td>
<td>Brigades, Technical Colleges</td>
<td>Trade test B &amp; C, National Craft Certificate (NCC), Certificate, Diploma</td>
</tr>
<tr>
<td>Commercial, clerical, business and public administration</td>
<td>Brigades, Technical Colleges</td>
<td>Foundation, Certificate &amp; Diploma</td>
</tr>
<tr>
<td>Agriculture, forestry and fisheries</td>
<td>Brigades</td>
<td>Trade Test C &amp; Diploma</td>
</tr>
<tr>
<td>Hospitality and tourism</td>
<td>Technical Colleges</td>
<td>Certificate</td>
</tr>
<tr>
<td>Sports &amp; Leisure</td>
<td>Technical Colleges</td>
<td>Certificate</td>
</tr>
<tr>
<td>Multi Media</td>
<td>Technical Colleges</td>
<td>Diploma</td>
</tr>
<tr>
<td>Hair Dressing &amp; Beauty Therapy</td>
<td>Technical Colleges</td>
<td>Certificate</td>
</tr>
<tr>
<td>Clothing Design &amp; Textiles</td>
<td>Technical Colleges</td>
<td>Foundation</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>Brigades, Technical Colleges</td>
<td>Trade test B &amp; C, National Craft Certificate (NCC), Certificate, Diploma</td>
</tr>
<tr>
<td>Maintenance &amp; Fitting</td>
<td>Technical Colleges</td>
<td>Trade test B &amp; C</td>
</tr>
<tr>
<td>Welding</td>
<td>Brigades</td>
<td>Trade test C</td>
</tr>
</tbody>
</table>

The majority of the programs (10) are offered in Technical Colleges compared to only six in Brigades. Program levels offered range from Trade test B as the lowest to Diploma as the highest. In most cases Brigades offer programs up to Certificate levels whereas Technical Colleges offered up to higher levels (Diploma).
3.8: Ethics clearance
The project was approved by the Human Research Ethics Committee (HREC) of the University of Newcastle, Australia in November 2012, (approval No H-2012-0320). Prior to the commencement of the study, the researcher sought and gained approval from the Government of Botswana, Ministry of Education & Skills Development to conduct the research in country. The researcher visited all the eight (8) institutions (4 Technical Colleges and 4 Brigades) to inform them of the study and distributed information letters as well as the consent forms highlighting voluntary participation prior to the data collection exercise. Follow up trips were made to these colleges to collect consent forms and to administer the surveys to the participants.

3.9: Questionnaire design and administration
The questionnaire used in this study was based on the Tracer Study described earlier, and was comprised of items with a 5 point Likert scale. An introduction to the survey was attached outlining what is required of the participants including a description of each section and what each section (Appendix B, C and D).

Information letters were distributed to the eight (8) institutions (4 Technical Colleges and 4 Brigades). These were chosen to obtain a good spread of urban and non-urban institutions. Only eight were chosen because of time limitations and physical resources available to the researcher. A representative sample of eight colleges (four Brigades and four Technical Colleges) was taken from the 49 colleges using cluster random sampling: four colleges were in small towns/rural areas and four in the cities/urban areas.

The total college learner population is approximately eight thousand five hundred and forty three (8 543) from which a sample was taken from eight institutions (4 Brigades and 4 Technical Colleges) using purposive sampling to solicit quantitative data. Johnson & Christensen (2012) explain purposive sampling as a “non-random sampling technique in which the researcher solicits persons with specific characteristics to participate in the research study” (p. 231). Information letters were also sent to employers as well as the consent forms highlighting voluntary participation prior to the data collection exercise (Appendix F.4). The consent forms (Appendix H.4) communicated the nature and purpose of the study, how the data was to be collected and used, and assurance of anonymity to protect the participants’ identity and privacy. Invitations to participate
(Appendix G.1) were distributed via eight institutions and CEOs of companies who participated in the study. Principals from these institutions identified administrators and lecturers to become potential participants. The lecturers then distributed the consent forms to their learners at the end of their teaching/learning sessions in a manner that allowed them time to make a decision at a later stage without feeling pressured to do so. The same procedure was followed with the employers. Drop boxes (for each group of participants) for depositing signed consent were availed a week in advance and were collected prior to the data collection exercise.

The Learner survey (Appendix B) consisted of six main sections. The first section touched on respondents’ personal information which included their age, gender, levels of study and areas of specialisation. Section two was about the vocational course respondents have enrolled in, and section three required information about program content. Section four reviews program resources whereas section five deals with program instruction/evaluation methods. The last section of the data solicited information about graduation requirements/employment requirements. There was provision for additional comments where respondents were free to talk about aspects of their programs within their courses that were not previously covered anywhere in the survey. Information about the names of respondents’ colleges as well as their year of completion was also requested.

The Lecturers’ questionnaire (Appendix B) had seven main sections. The first section solicited information about the TVET curriculum the lecturers are involved in, and the second section was about the course content and the following section three required information about course resources. Course instruction/evaluation methods were covered in section four followed by graduation/employment requirements for learners upon course completion in section five. Section six of the survey solicited information about the duration of the term (work term). Experience of lecturers and job satisfaction were covered last in section seven of the survey. The employer survey was designed slightly differently from Lecturer and Learner surveys. It solicited information about learner competencies and the attributes employers look for when recruiting graduates for various positions within their establishments.

Participants were required to tick (✓) inside the box of the Likert scale questions to indicate their response. They were also expected to respond to open ended questions on
the survey instruments. Completed surveys from TVET Learners, TVET Lecturers, and employers were dropped in a supplied box which was collected a week after the deadline. Some surveys were e-mailed to the potential participants and their responses were returned the same way by e-mail and some by fax.

Permission was sought by the researcher and approval granted by institution managers and Government officials to collect policy and other relevant documents that are of importance to this research.

3.10: Interview Protocol
For the purposes of identifying the sample for the qualitative data (interviews) critical-case sampling was used for government officials in participating government ministries (Ministry of Education & Skills development and Ministry of Labour & Home Affairs). Justification is based on the fact that the cases identified were influential persons (because of the nature of their offices and the positions held) from within the TVET sector in Botswana. Invitations and consent forms were sent out a week in advance and collected a week prior to the commencement of the interviews. Department heads/directors (government officials) worked with their colleagues to take part in the exercise. A draft interview protocol was sent by e-mail a week prior to the interviews so that the participants could prepare themselves and possibly think of what response to give during the actual interview session. Responses to oral interviews were recorded using a tape recorder.

3.11: Background of the Tracer study instruments used
The present study made use of instruments developed for the earlier Tracer Study by Botswana Training Authority (see Chapter 1: section 1.4). For this study it was modified to suit the framework used in establishing stakeholder perceptions of the current TVET practices in Government institutions in Botswana.

3.12: Characteristics of the instruments used for the study
The survey used in the present study had seven components with five point Likert scale items where respondents were to choose between these categories; Strongly agree (SA); Agree (A); Not sure (NS); Disagree (D); Strongly disagree (SD). Representation of the scale was from five (5) as the highest for Strongly Agree (SA) and one (1) as the lowest
for Strongly Disagree (SD). The positive impact that the previous use of the survey in the Tracer study had on the validity of its present use overcame any hesitation about the central ‘Not sure’ response that may have been engendered by recent work on Likert scales (UNESCO & ILO, 2002).

On the basis of an extensive review of literature, it was found that the Tracer Study instrument which was modified to suit the context of this study was the appropriate one. For this purpose, the questionnaire was further refined after expert advice from my supervisors. Refinements included the introduction to the survey to the participants; for the adopted TVET Learners’ survey, section B which dealt with employment status and history was taken out on the current TVET Learners’ survey. Furthermore, the current TVET Learners’ survey had more sections (eight) compared to the original graduate survey used for the Tracer Study which had only three sections. Modifications also included restructing some of the questionnaire items to address the sample population targeting the present situations in and around TVET institutions in Botswana. The TVET Learners’ survey in this study consisted of eight major sections:

1) Section A: Personal Information
2) Section B: TVET Learners choice of study (Vocational Course)
3) Section C: Program Content
4) Section D: Program Resources
5) Section E: Program instruction/Evaluation Methods
6) Section F: Graduation Requirement/Employment Requirements
7) Section G: Work Term (Industrial attachment)
8) Section H: Program Satisfaction

The same strategy used above was adopted for TVET Lecturers’ and employer surveys. For employer survey, not much was done to the questionnaire items except taking out those that dealt directly with employment. For TVET Lecturers, only those questionnaire items directed to TVET curriculum and practices were adopted into the final instrument; TVET Lecturers’ survey. TVET lecturers’ survey was modified to have seven sections which included:
3.13: Validity and Reliability of data collection instruments used

In the social sciences, researchers aim to use instruments that are valid and reliable. Creswell (2012) defines validity as the extent to which all gathered evidence measured what it was intended to measure. Reliability on the other hand is referred to as the consistency and stability of the instruments used (Phelan et al., 1995). Therefore research undertaken with invalid and unreliable instruments has limited value (Cohen, Manion, & Morrison, 2000; Creswell, 2012).

The application of validity and reliability in quantitative and qualitative studies takes up different forms that have been addressed extensively by many scholars. In qualitative studies, Cohen et al., (2000) contends that validity is exercised by:

Honesty, depth, richness and scope of data achieved, the participants approached, the extent of triangulation and the disinterestedness or objectivity of the researcher. Quantitative data might be improved through careful sampling, appropriate instrumentation and appropriate statistical treatments of data (p.105).

Thus, to obtain accurate results and draw correct conclusions, the use of valid instruments is the key to ensuring the validity of the study. Because the current study employed a mixed method approach (quantitative-surveys and qualitative-interviews) applications and definitions from both paradigms were considered to ensure quality was maintained throughout the study. With different types of validity and reliability covered in scholarly research, only those that apply to this study are further discussed.

3.13.1: Content validity

Content validity refers to how well a test measures the behaviour for which it is intended, (Creswell, 2012). The instruments used in this study were designed to examine the
outcomes of the implementation of the Revised National Policy on Education (RNPE) and National Policy on Vocational Education and Training (NPVET) on encouraging a market-led TVET system that meets Botswana’s economic and social demands. As broadly discussed in chapter 3, item clusters (called sections) (see Appendix B-E) were derived from boxes of the framework (Figure 2.3) to ensure that the surveys yield the outcomes that were focussed and relevant to the study.

### 3.13.2: Consensual validity

The surveys used were adopted from the tracer study conducted by the Botswana Training Authority (BOTA) on the employment outcomes of the Vocational Training Graduates in 2010. A draft version of the instruments was sent for comments and advice to my supervisors. The consensus was that there was a requirement for an instrument, and that the instrument used by BOTA on the tracer study with modifications would be useful and relevant. On the basis of specific comments from this survey, numerous minor changes and some major changes were incorporated into the final instruments.

### 3.13.3: Concurrent validity

Based on the outcomes of the tracer study conducted by BOTA, the cohort appears to have reasonably represented TVET graduates from within TVET institutions and should be applicable to the broader and current Botswana TVET system in general. Hence it can be argued the two instruments used exhibited concurrent validity.

### 3.13.4: Construct validity

It can be argued that the instruments used effectively evaluated the effectiveness of TVET practices in government TVET institutions in Botswana. This is supported by the outcomes of the tracer study conducted by BOTA in 2010.

### 3.13.5: Reliability of the instruments used

For this study, a detailed record of the subsequent steps of the fieldwork and data analysis was kept. Participants were informed via information letters with consent forms attached for voluntary participation on the study. Four hundred respondents (400) from TVET institutions in Botswana participated by completing the survey anonymously and six surveys were returned from different employer groups.
Subsequently Cronbach’s Alpha was calculated for each instrument (TVET Learners and TVET Lecturers; (Appendix B and C respectively). Data were analysed using the Statistical Package for Social Sciences using SPSS version 21. A significance value of p<0.05 was deemed to represent a significant difference between the mean response for sections being compared.

3.14: Chapter summary

This chapter examined the research methodology used to answer the five research questions. The chapter began by discussing the Tracer study conducted by Botswana Training Authority from which the research instruments were adopted. The five research questions based on general and specific objectives of the study were also discussed. The rationale for the research methodology used, including theoretical concepts and reasons for using quantitative and qualitative approaches were provided. The sampling design and sample size were identified, followed by the questionnaire design and how the research was conducted.

The next chapter (chapter 4) provides detailed analysis and results from both the quantitative and qualitative data collected for this study.
**Chapter 4: Quantitative Data Analysis**

**4: Introduction**

Detailed techniques and methodology for data collection were outlined previously in chapter 3. This chapter presents the results of the data analysis. The quantitative and qualitative data were obtained from four key stakeholder groups of TVET in Botswana (see chapter 3). The aim was to answer the five research questions that guided the study (section 3.3).

Statistical analysis of quantitative data was undertaken using the statistical package SPSS which is often used for social science research (Field, 2005, 2009; Pallant, 2011). For the qualitative analysis of interviews, the package NVivo was used (Bazeley, 2007; Bazeley & Jackson, 2013). For the stakeholder group TVET Learners, survey data were obtained from questionnaires (Appendix B). This was also the case for the stakeholder group TVET Lecturers (Appendix C). For the stakeholder group Employers, data were obtained from questionnaires which included open-ended questions (Appendix D), whilst for Government Officials, data were obtained using interviews (Appendix E for the interview schedule).

For the quantitative survey data obtained, descriptive statistics were calculated, followed by analysis of variance (ANOVA) to detect differences between survey item sections and stakeholder groups. Qualitative data gathered supplied complementary information to the results from the surveys. This data, which included responses to open ended questions from the questionnaires and interviews, was analysed using NVivo (Bazeley, 2007; Bazeley & Jackson, 2013).

**4.1 Quantitative Analysis of Learners’ responses**

**4.1.1 Background Information**

Four hundred (400) questionnaires (N=400) were returned from all the TVET institutions participating in the study (Appendix J; a list of institutions). About twenty five percent (25%) of TVET Learners out of the 316 responses did not state their industry areas. Section one of the questionnaire solicited information about learners’ personal information including their age, gender, level of training as well as their areas of training specialisation. The responses as per industry areas are represented in Table 4.1 below.
Table 4.1: Response rate as per industry areas

<table>
<thead>
<tr>
<th>Industry areas</th>
<th>No of responses</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Construction trades, crafts, trade &amp; industry</td>
<td>106</td>
<td>33.5</td>
</tr>
<tr>
<td>2) Commercial, clerical, business &amp; public admin</td>
<td>49</td>
<td>15.5</td>
</tr>
<tr>
<td>3) ICT</td>
<td>43</td>
<td>13.6</td>
</tr>
<tr>
<td>4) Hospitality &amp; tourism</td>
<td>27</td>
<td>8.5</td>
</tr>
<tr>
<td>5) Sports &amp; leisure</td>
<td>41</td>
<td>13.0</td>
</tr>
<tr>
<td>6) Mechanical</td>
<td>10</td>
<td>3.2</td>
</tr>
<tr>
<td>7) Hairdressing &amp; beauty therapy</td>
<td>13</td>
<td>4.1</td>
</tr>
<tr>
<td>8) Other</td>
<td>18</td>
<td>5.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>308</strong></td>
<td><strong>97.5</strong></td>
</tr>
</tbody>
</table>

Twelve groups responded to the survey as indicated in Table 4.1 above. Most returns came from the construction trades with 34.4% followed by commercial and business related courses with 15.9%, ICT with 14%, then sports and leisure with 13.3%.

Industry areas which recorded low response rates have been classified as ‘other’. These areas include agriculture related courses with 4 responses (1.3%), clothing design & textiles with 1 response (0.3%), multimedia 5 responses (1.6%), maintenance & fitting 5 responses (1.6%) and welding with 3 responses (0.9%).

Table 4.2: Industry areas with low response rate

<table>
<thead>
<tr>
<th>Other</th>
<th>No of responses</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Agriculture, forestry &amp; fisheries</td>
<td>4</td>
<td>1.3</td>
</tr>
<tr>
<td>2) Clothing, design &amp; textile</td>
<td>1</td>
<td>.3</td>
</tr>
<tr>
<td>3) Multimedia</td>
<td>5</td>
<td>1.6</td>
</tr>
<tr>
<td>4) Maintenance &amp; fitting</td>
<td>5</td>
<td>1.6</td>
</tr>
<tr>
<td>5) Welding</td>
<td>3</td>
<td>.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
<td><strong>5.7</strong></td>
</tr>
</tbody>
</table>

The least returns were in the areas of hospitality & tourism and clothing, design & textile (8.8% and 0.3% respectively). The reason for the low response rate in some industry areas may be explained by placement and assessment issues: some of the TVET learners in these areas were off-campus on industrial placement and others were preparing for final exams.
To establish the number of responses per levels of study within the industry areas, cross tabulation was carried out and the results in percentages are presented below:

### Table 4.3: Level of training vs Industry areas

<table>
<thead>
<tr>
<th>Industry areas</th>
<th>Construction, Trades, Crafts</th>
<th>Commercial, Clerical, Business</th>
<th>ICT</th>
<th>Hospitality &amp; Tourism</th>
<th>Sports &amp; Leisure</th>
<th>Mechanical</th>
<th>Hardiness &amp; Beauty Therapy</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade Test B</td>
<td>12</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>%</td>
<td>11.5</td>
<td>2.3</td>
<td>0.6</td>
<td>0.0</td>
<td>0.0</td>
<td>33.3</td>
<td>0</td>
<td>0.2</td>
<td>6.2</td>
</tr>
<tr>
<td>Trade Test C</td>
<td>19</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>7</td>
<td>29</td>
</tr>
<tr>
<td>%</td>
<td>18.3</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>33.3</td>
<td>0</td>
<td>0.7</td>
<td>9.5</td>
</tr>
<tr>
<td>NCC</td>
<td>33</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>34</td>
</tr>
<tr>
<td>%</td>
<td>31.7</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>11.1</td>
<td>0</td>
<td>0.0</td>
<td>11.2</td>
</tr>
<tr>
<td>Certificate</td>
<td>38</td>
<td>45</td>
<td>25</td>
<td>27</td>
<td>41</td>
<td>2</td>
<td>11</td>
<td>2</td>
<td>192</td>
</tr>
<tr>
<td>%</td>
<td>36.5</td>
<td>91.8</td>
<td>58.1</td>
<td>100</td>
<td>100</td>
<td>22.2</td>
<td>91.7</td>
<td>13.3</td>
<td>63.2</td>
</tr>
<tr>
<td>Advanced certificate</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>%</td>
<td>0.0</td>
<td>18.6</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>2.6</td>
</tr>
<tr>
<td>Diploma</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>%</td>
<td>1.9</td>
<td>6.1</td>
<td>11.6</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>8.3</td>
<td>33.3</td>
<td>5.3</td>
</tr>
<tr>
<td>Foundation</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>%</td>
<td>0.0</td>
<td>2.9</td>
<td>9.3</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0</td>
<td>5.5</td>
<td>2.0</td>
</tr>
</tbody>
</table>

*Min score=1, max score =5, n=316*

Table 4.3 gives an overview of responses within different industry areas across the qualifications that were chosen for this study (section 3.2) as per the Botswana National Qualifications Framework. These areas are in Levels 1 and 2 of the framework. The levels as reflected range from Trade Test B as the lowest in TVET Level 1 category and Diploma as the highest within TVET Level 2 category. Most responses were recorded from certificate level programs (63.2%) followed by National Craft Certificate (NCC) (11.2%). Trade test B, C, Diploma, Advanced Certificate and Foundation level programs recorded
lower responses at 9.5%, 6.2%, 5.3%, 2.6% and 2% respectively. The rates of return from technical colleges and brigades are shown in Table 4.4 below:

Table 4.4: Rate of returns from Technical Colleges and Brigades

<table>
<thead>
<tr>
<th>Type of institution</th>
<th>No of responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical colleges</td>
<td>179</td>
<td>56.6</td>
</tr>
<tr>
<td>Brigades</td>
<td>137</td>
<td>43.4</td>
</tr>
<tr>
<td>Total</td>
<td>316</td>
<td>100.0</td>
</tr>
</tbody>
</table>

4.1.2: Analysis of the TVET Learners survey on seven sections

A mean score was calculated for each item, and then a grand mean was calculated across the items making up each of the seven sections of the questionnaire, allowing between-section comparisons. Questionnaire items were clustered to represent seven cohesive sections. The sections are shown in Table 4.5 below:

Table 4.5: Sections of the survey used in this study

<table>
<thead>
<tr>
<th>Sections of the survey</th>
<th>Grand mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Vocational course</td>
<td>3.75</td>
<td>.885</td>
</tr>
<tr>
<td>2) Program content</td>
<td>3.42</td>
<td>.623</td>
</tr>
<tr>
<td>3) Program resources</td>
<td>2.96</td>
<td>.914</td>
</tr>
<tr>
<td>4) Program instruction/evaluation methods</td>
<td>3.52</td>
<td>.911</td>
</tr>
<tr>
<td>5) Graduation requirements/employment requirements</td>
<td>3.55</td>
<td>.881</td>
</tr>
<tr>
<td>6) Work term</td>
<td>3.47</td>
<td>.867</td>
</tr>
<tr>
<td>7) Program satisfaction</td>
<td>3.87</td>
<td>.963</td>
</tr>
</tbody>
</table>

Program satisfaction has a higher mean score of 3.87 followed by vocational course with 3.75, graduation requirement/employment requirement 3.55 and program instruction 3.52. The least mean scores were for work term (industrial attachment), program content and program resources scoring 3.47, 3.42 and 2.96 respectively. ANOVA was used to check for statistical significant difference between these means as captured in Table 4.6 below. The term work term in this study refers to time spent in the industry during work
placement (industrial attachment). Thus, both the terms (Work term and industrial attachment) will be used interchangeably throughout the study.

**Figure 4.1: Mean scores for the seven sections of TVET Learner’s survey**

![Bar chart showing mean scores for the seven sections of TVET Learner’s survey]

*Min score=1, max score=5, n=316*

**Key:**
- VocCrse = Vocational Course;
- ProgCont = Program content;
- ProgRes = Program resources;
- ProgInst = Program instruction;
- GradReq = Graduation Requirement;
- WorkTerm = Work Term;
- ProgSat = Program Satisfaction

The results indicate that TVET Learners are broadly positive about most areas within their programs. They were somewhat satisfied with the course but not with the resources available for their training.

To determine if there was a statistically significant difference between sectional grand means, a one way repeated measures analysis of variance was carried out. A probability value of $p<0.05$ was deemed to represent a significant difference between the sections being compared. Table 4.5 above shows mean scores for the seven sections in the TVET learner survey data.

Significant differences in means were found between all sections. This meant that the analysis of responses to TVET Learners surveyed reflected differing views and perceptions towards some sections of the surveys regarding effectiveness of TVET practices in Botswana TVET institutions. Table 4.6 below summarises the statistical significant differences found between sections:
Table 4.6: Summary of significant differences between sections of TVET Learners’ survey

<table>
<thead>
<tr>
<th>Survey sections</th>
<th>Other sections compared with</th>
<th>Mean difference</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>0.34*</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0.78*</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>0.19*</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>0.20*</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>0.27*</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>-0.13</td>
<td>0.43</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>0.45*</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>-0.14</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>-0.14</td>
<td>0.26</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>-0.06</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>-0.47*</td>
<td>0.00</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>-0.59*</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>-0.59*</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>-0.51*</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>-0.91*</td>
<td>0.00</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>0.08</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>-0.32*</td>
<td>0.00</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>0.08</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>-0.33*</td>
<td>0.00</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>-0.40*</td>
<td>0.00</td>
</tr>
</tbody>
</table>

*= mean difference is significant at .05 level

Key:
1= Vocational Course
2= Program Content
3= Program Resources
4= Program Instruction
5= Graduation Requirement
6= Work Term
7= Program Satisfaction

An overview of Table 4.6 above shows that there were significant differences between most sections of the survey. Due to the significant differences between most sections of TVET learner survey, a further analysis of these sections (sections 1, 3, 6 and 7) were undertaken (refer to Table 4.6 above). This was to identify if any of the items were rated more significant than others in individual sections.
4.2: TVET Learners’ responses on section one (your vocational course)

An inquiry into each section of the survey was aided by a list of items. Each section has a maximum of five (5) items and a minimum of two (2). For section one (1), your vocational course, there were five (questions 5-9) items (refer to Table 4.7 below):

<table>
<thead>
<tr>
<th>Sections</th>
<th>Items</th>
<th>Individual item mean</th>
<th>Overall mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocational Course</td>
<td>5) When you enrolled, you were provided with a course outline detailing all the learning outcomes and performance criteria for successful completion</td>
<td>3.85</td>
<td>3.75</td>
</tr>
<tr>
<td></td>
<td>6) The objectives of the program were clearly explained to you when you enrolled.</td>
<td>3.78</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7) You are well informed about the learning outcomes of the different units in your course</td>
<td>3.76</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8) The program description accurately described the types of duties a graduate can expect to perform in the work environment</td>
<td>3.66</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9) The program length is sufficient to produce graduates with the required knowledge and skills in the work field</td>
<td>3.70</td>
<td></td>
</tr>
</tbody>
</table>

Min score=1, max score=5, n=316

The responses for each item as shown in Table 4.7 shows that item five had the highest mean score (3.85) followed by item 6 (3.78). Item seven followed closely with a mean score (3.76). The lowest scores were in items nine and eight recording 3.70 and 3.66 and respectively. Comparatively, the summary above shows that TVET Learners are more positive about some items of the survey (items 5, 6 and 7) than others (item 8). They were positive with the course outline and its contents but not so positive with the time it will take to complete their courses and have the skills enabling them to perform effectively in the work environment.

To determine if there was a significant difference between the highest and lowest mean scores, an analysis using one-way repeated measures ANOVA was undertaken. The analysis however did not indicate any statistical difference between the highest and lowest means. This is an indication that the TVET Learners are somewhat happy with their courses.
### 4.3: TVET Learners’ responses on section two of the survey (program content)

This section had five (5) items starting with item 10 (refer to Table 4.8 below).

Table 4.8: Mean scores for items 10-14

<table>
<thead>
<tr>
<th>Sections</th>
<th>Items</th>
<th>Individual item mean</th>
<th>Grand mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program content</td>
<td>10) The sequencing of training (i.e. order of units presented) within the program properly addresses the course requirements for successful completion</td>
<td>3.66</td>
<td>3.42</td>
</tr>
<tr>
<td></td>
<td>11) Generally, the time allocated to each unit in your course is sufficient</td>
<td>3.34</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12) There are units that contain learning objectives not particularly relevant to this course</td>
<td>2.98</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13) There are units of this course that need to be revised, removed or added</td>
<td>3.86</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14) There is a proper balance between theory (i.e. classroom) and practice (i.e. laboratory/ shop/ fieldwork) within the course</td>
<td>3.28</td>
<td></td>
</tr>
</tbody>
</table>

Min score=1, max score=5, n=316

The highest score (3.89) was recorded for item 13 followed item 10 (3.67) then item 11 (3.33). The least scores were for items 14 and 12 where 3.28 and 2.98 were recorded respectively. Statistically significant difference was observed between items of this section of TVET Learners’ survey where (f=30.81, p=.00). This shows that the majority of TVET Learners did agree that more could be done to their courses to improve their current status. A further analysis was undertaken to establish where the significant difference between the mean scores were observed. The results are displayed in Table 4.9 below:

Table 4.9: TVET Learners’ responses on section 2 of the survey (program content)

<table>
<thead>
<tr>
<th>Items</th>
<th>Other items compared with</th>
<th>Mean difference</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>11</td>
<td>0.33*</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>0.67*</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>-0.23</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>0.33*</td>
<td>0.01</td>
</tr>
<tr>
<td>11</td>
<td>12</td>
<td>0.33*</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>-0.56*</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>0.04</td>
<td>0.00</td>
</tr>
<tr>
<td>12</td>
<td>13</td>
<td>-0.89*</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>0.60*</td>
<td>0.00</td>
</tr>
<tr>
<td>13</td>
<td>14</td>
<td>-0.60*</td>
<td>0.00</td>
</tr>
</tbody>
</table>

*= mean difference is significant at .05 level
Table 4.9 shows a statistical difference between items 10 and 11, 12, 14. Other statistical differences were observed between items 11 and 13, between items 12 and 13, and between 13 and 14. This is a strong indication that TVET Learners feel that these items (11 time, 12 relevance & 14 theory/practice) need to be properly and adequately addressed with regards to program effectiveness. This suggests that there may be a need for a significant program review.

An in-depth analysis of individual item responses was carried out using one way ANOVA between groups for comparison between technical colleges and brigades. The same procedure followed for section two above was adopted in this section. For individual item responses, the results are discussed below.

4.3.1: Comparison of means using ANOVA for item 10

The results for item 10 revealed a total overall mean of 3.83 for the technical colleges and 3.44 for the brigades. This gave a grand mean score of 3.66. A statistically significant difference between means was detected between Technical Colleges and Brigades (f=13.257, p=.000), (see Appendix K). Most Learners strongly disagreed (mean score of 1.60) that sequencing of training (i.e. order of units presented) within their program properly addressed the course requirements for successful completion. Another high mean score was for the group that was not sure (1.58). Very few learners (mean score 1.21) strongly agreed that this aspect of their training was been adequately addressed. Noted was the statistical significance of the difference between the Technical Colleges and Brigades (f=4.589, p=.001), (see Appendix L).

4.3.2: Comparison of means using ANOVA for item 11

The Technical Colleges rated this aspect (whether the general time allocated to each unit in their course was sufficient) with a mean score of 3.32 compared to 3.36 for the brigades but the difference was not statistically significant.

4.3.3: Comparison of means using ANOVA for item 12

A very small (but statistically significant: f=11.022, p=.000) difference in opinion regarding relevance was noted between TVET Learners in Brigades and Technical Colleges. TVET Learners in Technical Colleges were less confident regarding the
relevance of their courses (mean score of 2.88) than those from the Brigades (mean of 3.12), giving the combined mean score of 2.98.

4.3.4: Comparison of means using ANOVA for item 13

For item 13 the responses from Technical Colleges showed a mean score of 3.94 compared to 3.74 from the Brigades. Statistically significance between groups was detected ($f=6.191$, $p=.000$). This gave a combined mean score of 3.86 regarding learner perception of their courses as being in need of revision. Generally, it’s quite interesting to note that the majority (1.58 mean) of TVET Learners combined were not sure followed by those who agreed with mean score of 1.51. Very few strongly disagreed with the mean score of 1.10., (see Appendix N).

4.3.5: Comparison of means using ANOVA for item 14

Learners from Technical Colleges were generally not happy with the balance between theory and practice in their training with a mean score of 3.17 compared to 3.42 from learners in brigades. No statistically significant difference was observed between groups.

4.4: TVET Learners’ responses on section three of the survey (program resources)

The next section of the survey solicited information about Learners’ program resources. Five (5) items are included as shown in Table 4.10 below:

Table 4.10: Mean scores for items 15-19 (program resources)

<table>
<thead>
<tr>
<th>Sections</th>
<th>Items</th>
<th>Individual item mean</th>
<th>Grand mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Resources</td>
<td>15) The tools, equipment and/or supplies listed for practical components of the course (if applicable) are satisfactory for the delivery of the course</td>
<td>2.99</td>
<td>2.96</td>
</tr>
<tr>
<td></td>
<td>16) The textbooks listed were adequate for my course (i.e. were the textbooks are current and relevant for your training)</td>
<td>2.73</td>
<td></td>
</tr>
<tr>
<td></td>
<td>17) There was adequate learning resources (i.e. print media, audio-visual materials, etc.) provided for my course)</td>
<td>2.65</td>
<td></td>
</tr>
<tr>
<td></td>
<td>18) The teaching instruction is reinforced with appropriate technologies (i.e. current software, hardware, etc.)</td>
<td>2.81</td>
<td></td>
</tr>
<tr>
<td></td>
<td>19) There are specialized equipment, textbooks, software or other resources which could strengthen the delivery of this course but are not available</td>
<td>3.63</td>
<td></td>
</tr>
</tbody>
</table>

$Min \ score=1, max \ score=5, n=316$
TVET Learners believed that equipment, textbooks and other resources which could be useful for their training were not available (highest mean score 3.63) (item 19). Similarly, they were not satisfied with resources that are currently in use especially for the practical component of their training (item 15 with 2.99, then item 18 with 2.81). Item 16 scored 2.73 while the lowest scores were for items 16 and 17 recording 2.73 and 2.65 respectively. Generally, TVET Learners were not satisfied with the resources available for effective training in government TVET institutions in Botswana.

4.5: TVET Learners’ responses on section four of the survey (program instruction/evaluation methods)

This section of the survey was an inquiry into the program instruction. It had three items to assist with the inquiry. The items 20, 21 and 22 as shown in Table 4.11 below:

<table>
<thead>
<tr>
<th>Sections</th>
<th>Items</th>
<th>Individual item mean</th>
<th>Grand mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program instruction/Evaluation Methods</td>
<td>20) The instructional materials in my course are appropriate in exposing me to workplace situations</td>
<td>3.50</td>
<td>3.52</td>
</tr>
<tr>
<td></td>
<td>21) The course content/learning activities are consistent with industry practices</td>
<td>3.62</td>
<td></td>
</tr>
<tr>
<td></td>
<td>22) The assessment methods for this course are appropriate (i.e. an adequate balance of theoretical and practical assessments)</td>
<td>3.45</td>
<td></td>
</tr>
</tbody>
</table>

Item 21 (consistency with industrial practice) has the highest mean score (3.62) while items 20 (appropriate instructional materials) and 22 (assessment methods) recorded mean scores of 3.50 and 3.45 respectively. This indicates that learners feel industrial consistency has been more effectively addressed compared instructional materials and assessment. This indicates learners see a need for instructional designs to be made more relevant to their needs. Statistically significant difference was noted within the groups; f (1.96, 586.62)=3.63; p=.03. A further analysis was carried out and findings are presented in Table 4.12 below:
Table 4.12: Summary of mean score significant differences for items 20-22 (instruction)

<table>
<thead>
<tr>
<th>Item</th>
<th>Items compared with</th>
<th>Mean difference</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>21</td>
<td>-0.12</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>0.05</td>
<td>0.46</td>
</tr>
<tr>
<td>21</td>
<td>20</td>
<td>0.12</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>0.18*</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Table 4.12 above shows that TVET Learners are happy with the consistency within the course (item 21) but not so with the assessment practices (item 22) employed.

4.6: TVET Learners responses on section five of the survey (graduation requirement /employment requirements)

This section has two items (26 and 27, modified and referred to as 23 and 24 for the analysis). The modifications were done for ease of reference and coherency in this section. The responses are computed and mean scores for each item were recorded as 3.62 for item 23 as the highest and 3.48 for item 24 as the least score. TVET Learners’ responses showed some positivity towards this part of their training as shown in Table 4.13 below:

Table 4.13: Mean scores for items 23-24 (graduation requirement /employment requirements)

<table>
<thead>
<tr>
<th>Sections</th>
<th>Items</th>
<th>Individual item mean</th>
<th>Grand mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation requirement/employment Requirements</td>
<td>23) The requirements for successful completion (i.e. passing grades of units, work term completion, etc.) of the course are sufficient</td>
<td>3.62</td>
<td>3.55</td>
</tr>
<tr>
<td></td>
<td>24) The requirement for graduates to obtain certification as a condition of employment was clearly outlined in the course outline</td>
<td>3.48</td>
<td></td>
</tr>
</tbody>
</table>

Min score=1, max score=5, n=316

A one-way repeated measure ANOVA was conducted to compare scores for section 6, (graduation requirements/employment requirement) in an attempt to establish how effective TVET Learners thought this area was in preparing them for the world of work.
There was however no statistically significant difference noted for the graduation requirements/employment requirement between groups.

4.7: Learners’ responses on section six of the survey (work term)

Section six has 4 four items 29, 30, 31 and 32 referred to as 25, 26, 27 and 28 throughout the discussion as shown in Table 4.13 below. The modifications were done for ease of reference and coherency in this section. The mean scores for each item were as follows; item 25 recorded 3.52 as the highest mean score, item 27 recorded 3.49 as the second highest. The least scores were for items 28 and 26 recording 3.46 and 3.41 respectively. This shows that learners were not so positive about the objectives of the work term being clear and sufficient compared to the appropriate placement of the work term within their courses.

<table>
<thead>
<tr>
<th>Sections</th>
<th>Items</th>
<th>Individual item mean</th>
<th>Grand mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work term</td>
<td>25) The work term is appropriately placed within the course</td>
<td>3.52</td>
<td>3.47</td>
</tr>
<tr>
<td></td>
<td>26) The objectives of the work term are clear and sufficient</td>
<td>3.41</td>
<td></td>
</tr>
<tr>
<td></td>
<td>27) The length of the work term is adequate to reinforce your learning, and allow you to put what you learnt inside the classroom into real life situations</td>
<td>3.49</td>
<td></td>
</tr>
<tr>
<td></td>
<td>28) The assessment methods utilized for the work term are appropriate</td>
<td>3.46</td>
<td></td>
</tr>
</tbody>
</table>

4.7.1: Comparison of means using ANOVA for item 25

Asked whether the work term is appropriately placed within the course, TVET Learner responses indicated that the placement of work term within their course somewhat satisfactory (item 25; mean 3.52) but felt the objectives were somewhat not clear and sufficient (item 26; mean 3.41). This is an indication that generally, TVET Learners are not satisfied with their work term.

A further analysis of variance was carried out using ANOVA. It revealed that TVET Learners in Technical Colleges are more likely to agree that the work term is appropriately placed within the course (mean 3.76) than those in Brigades (mean 3.20). A significant difference was noted between institutions (f =23.658, p=000).
4.7.2: Comparison of means using ANOVA for item 26

Descriptive analysis performed showed differences in opinions regarding the length of the work term between learners in Technical colleges and Brigades. Generally the work term in Government TVET institutions is the same. For completing NCC learners it has also been longer as most of them in the past were apprentices. There is currently no evidence that this has changed especially in those institutions still offering these programs. Communications with some TVET institutions however indicated some uncertainty about the future of these programs upon the Government completion of “the Brigade take-over project”. The researcher understands the work term for BTEP related courses is generally less than that of Trade Tests and NCC programs. Generally a combined response rate for two TVET provision (Technical Colleges and Brigades) indicated that most learners were not satisfied (strongly disagree mean 1.72) with this aspect of their training. A large number (mean 1.49) of TVET Learners were not really sure. Those who were satisfied (strongly agreed mean 1.22) with how the issue has been dealt with were very few. Statistically significant difference was noted between groups where \( f=23.243 \) and \( p=.000 \). Further analysis carried out between the two TVET provisions indicated that TVET learners in Technical Colleges (mean score 3.66) were likely to be satisfied with the objectives of the work term compared to those in Brigades (mean score 3.07). Generally, this indicates that learners in technical colleges were somewhat more satisfied with the objectives of the work term compared to learners in the Brigades. There was a significant difference between the institutions (\( f=5.793 \) and \( p=.000 \)).

4.7.3: Comparison of means using ANOVA for item 27

When asked whether the length of the work term was adequate to reinforce their learning, and allowed them to put what they have learnt inside the classroom into real life situations, TVET Learners were positive in their responses (mean scores 3.46 and 3.54 from Technical Colleges and Brigades respectively). There was no statistical significant difference noted between the groups. A further analysis to establish how learners rated this aspect of their training was performed. It revealed that those who felt this aspect has not been given enough attention (strongly disagreed) recorded a mean score of 1.50 compared to those who felt this aspect of their training has been effective recorded the
mean score of 1.37 (strongly agreed). Those who were not sure recorded 1.39. No statistically significant difference was observed between groups.

4.7.4: Comparison of means using ANOVA for item 28

Item 28 solicited information about the assessment practices employed. There were differences in opinion between TVET Learners in technical colleges and brigades. TVET Learners in Technical Colleges were somewhat satisfied with the current assessment practices (mean 3.61) compared to those in Brigades (mean scores 3.26). There was statistical significant difference noted between the groups ($f=7.927$, $p=.005$). One way repeated measures ANOVA was conducted to compare scores for section 6 in an attempt to establish how effective TVET Learners thought this area was in preparing them for the world of work. There was no statistically significant difference between mean scores on the items.

4.8: Learners responses on section seven of the survey (skills acquisition, quality of training)

Two items were included, 33 and 34. For this analysis and coherency in numbering, they were referred to as item 29 and 30 where item 29 solicited information about whether the training adequately prepares the learners for employment while item 30 concerned the adequacy of the quality of their training. Mean scores were 4.05 for job-readiness and 3.68 for program adequacy. A significant difference was observed between the two items ($t=7.44$, $df=295$, $p=.000$).

4.8.1: Comparison of means using ANOVA for item 29

TVET Learners were asked whether their training adequately prepares them for employment. TVET Learners in Technical Colleges were somewhat happy with their current training (mean 4.18) compared to those in brigades (mean scores 3.87). There was no statistical significant difference noted between the groups. A further analysis to establish how learners responded to this item revealed that those who strongly agreed recorded a mean score of 1.36 compared to those who felt otherwise with the mean score of 1.82 (strongly disagreed). Those who were not sure recorded 1.35. No statistical significant difference was observed between groups.
4.8.2: Comparison of means using ANOVA for item 30

TVET Learners were asked whether the quality of their training was adequate. There was no statistical significant difference noted between the groups. The mean scores recorded were 3.78 and 3.54 from Technical Colleges and Brigades respectively. To establish how learners responded it revealed that those who felt their training was effective (strongly agreed) recorded a mean score of 1.36 compared to those who felt otherwise with the mean score of 1.71 (strongly disagreed). Those who were not sure recorded 1.39.

4.9: Summary of responses of the comparison of the sections of TVET Learners’ survey

An overview of responses from TVET Learners’ survey indicated that generally, there was some positivity within some sections compared to others. The least scored means were for the sections dealing with the work term (mean 3.47), program content (mean 3.42) and program resources (mean 2.96). For work term, TVET Learners felt that the objectives of the overall term were not that clear and sufficient. They also expressed strong opinions about the overall assessment methods utilized throughout the term. With program content, TVET Learners were critical about their learning units in that they contained learning outcomes that were not particularly relevant to their courses. They were also not positive with the time allocated for the whole term (shorter or longer). Another crucial point raised by learners was of sequencing of training and striking balance between theory and practice. For program resources, the system was also criticised for having minimal print media, audio and visual materials used during training sessions. Inadequacy, relevancy of textbooks as well as insufficient use of appropriate technologies to reinforce learning and assessment methods were also raised.

These results support anecdotal criticism of the Botswana government TVET system as characterised by non-relevance, too much time spent in colleges rather than in workplaces for exposure to real life situations and industry experience. Another issue is that of resources in colleges which are obsolete (especially in Brigades) and some non-functional (especially in Technical Colleges) either because the present TVET Lecturers are not trained to handle them or they were never operational. The use of modern competency based assessment in government TVET colleges as well as appropriate testing
technologies was also raised. The feeling was that current staff has limited experience in conducting such assessments.

4.9.1: Comparison of views of TVET Learners from Technical Colleges and Brigades

Different perceptions towards the overall TVET provision in Botswana were demonstrated by TVET Learners’ responses from government Technical Colleges and Brigades (Appendix C). The results indicated that TVET Learners’ from Brigades were less positive about their programs compared to their counterparts in Technical Colleges. Statistically significant differences were noted between sections of the survey as summarised in Table 4.6. There were also statistically significant differences between some items in sections 2 (program content), 6 (work term) and 7 (program satisfaction), Table 4.5. Section 2 solicited information about the program content as summarised in Table 4.8. Statistically significant differences between items noted were captured in Table 4.9. Section 6 elicited information on work term, Table 4.13. There were statistically significant differences between Technical Colleges and Brigades where for item 25 (placement), $f=23.658$, $p=.00$; item 26 (objectives), $f=23.243$, $p=.00$; and item 28 (assessment of the work term), $f=7.927$, $p=.05$.

4.9.2: Institution location vs TVET Learners’ responses

Based on the comparison between TVET provisions in government institutions above, a further investigation was carried out to establish whether learners’ perceptions about the overall TVET effectiveness in Botswana differ between rural and regional areas. A cross tabulation was carried out to investigate whether learners in these colleges (in rural and urban areas) have different perceptions. Overview of the results (Appendix P) shows that the learners in urban areas are more positive about the overall TVET effectiveness compared to those rural areas. Item 8 (Appendix B) for example, shows that more than 80% of the learners from urban areas view the time allocated to their unit title to have been effectively addressed compared to 57.8% from institutions in rural areas. At least 50.3% of learners from urban institutions indicated that there are units that contain learning objectives not particularly relevant to their course compared to a very low percentage (24.1%) from rural institutions. Another concern is also noted for item 17. At least less than 50% (44.2% urban and 21.2% rural respectively) of learners in both
locations were less positive when asked whether there was adequate learning resources (i.e. print media, audio-visual materials, etc.) provided for their course.

Negative responses was noted for item 18 where learners were asked about whether the teaching instruction is reinforced with appropriate technologies (i.e. current software, hardware, etc.). 46.7% (urban) and 23.8% (rural) agreed. Difference between opinions was noted for item 24 where learners were asked whether the requirement for graduates to obtain certification as a condition of employment was clearly outlined in the course outline. More than 60% of learners from urban institutions feel this aspect has been effectively addressed compared to 49.1% from learners in rural institutions. Item 26 also showed difference in opinions. Most learners (61.6%) in urban institutions showed some positivity compared to those in rural institutions who were less positive with 40.7%. One way ANOVA was used to establish whether there is statistical significance between these groups. There was statistically significant difference observed between these groups where p=0.00 (Appendix K).

4.9.3: Age vs TVET Learners’ responses

Most learners in the institutions were within the range of 16-24 years, followed by 25-34 year olds. Very few were in the 35-44 year old category. An overview of the results shows that the 35-44 year olds were more positive about TVET effectiveness in Botswana compared to their counterparts in 16-24 and 25-34 year categories. For example, for item 8 which asked the learners whether the program description accurately described the types of duties a graduate can expect to perform in the work environment, 84.6% within 35-44 year olds felt this aspect has been effectively addressed their courses compared to 62.8% and 67.2% within 25-34 and 16-24 year olds respectively. Item 18 also is a very interesting one where learners were asked whether the teaching instruction is reinforced with appropriate technologies (i.e. current software, hardware, etc.). Differences in opinion were noted where the 35-44 year olds recorded more than 50% positivity. The other categories perceived this aspect differently and strongly disagreed to the statement. The 16-24 year olds recorded 42.3% while 25-34 recorded 26.2%. This trend calls for a further investigation to establish contributing factors which will be recommended in Chapter 7 - Summary.
4.10 Summary of the analysis of the TVET Learners’ survey

The TVET Learners’ questionnaire consisted of seven sections establishing stakeholder perceptions and effectiveness about Botswana’s TVET system. Frequency of TVET Learners responses from government TVET offering institutions (technical colleges and brigades) were established using SPSS. In each section group means were calculated to allow comparisons with other sections. Significant difference was accepted where the probability of a type 1 error was less than 0.05 (p<0.05).

The results for statistically significant differences between sections noted were summarised in Table 4.6 above. Further investigation revealed that TVET Learners in Brigades were less positive about the overall effectiveness of Botswana TVET systems (section 4.9.1). This is an indication that somehow, TVET Learners across the two provisions (Brigades with apprenticeship training and Technical Colleges with BTEP [Botswana Technical Education Programs]) felt that the system is fragmented and therefore calls for proper review to harmonise training which can benefit Botswana.

4.11: Quantitative data analysis for TVET Lecturers’ responses

This sub-section describes the analysis of the data collected from TVET Lecturers in eight TVET institutions in Botswana. The customised TVET Lecturers’ questionnaire was used by Botswana Training Authority (BOTA) in 2010 when conducting a tracer study to establish the employment outcomes of the vocational training graduates from accredited vocational training institutions, hence internal reliability was maintained.

For this study four of the institutions were technical colleges (Gaborone, GTC, Maun, MTC, Palapye, PTC and Francistown, FCTVE) and four were brigades (Shashe, Serowe, Kang and Barolong). The number of responses received was 84 from 200 questionnaires distributed. For anonymity, Technical Colleges and Brigades have been de-identified as captured in Table 4.15 below A summary of the response percentages across the institutions is in Table 4.15 below:
Table 4.15: Number of responses from TVET institutions

<table>
<thead>
<tr>
<th>TVET institutions</th>
<th>Names of institutions</th>
<th>Number of Responses</th>
<th>Total</th>
<th>Responses (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical colleges</td>
<td>TechCollege1</td>
<td>15</td>
<td>57</td>
<td>17.9</td>
<td>63.1</td>
</tr>
<tr>
<td></td>
<td>Techcollege2</td>
<td>5</td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TechCollege3</td>
<td>12</td>
<td></td>
<td>14.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TechCollege4</td>
<td>25</td>
<td></td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Brigades</td>
<td>Brigade1</td>
<td>3</td>
<td>31</td>
<td>3.6</td>
<td>36.9</td>
</tr>
<tr>
<td></td>
<td>Brigade2</td>
<td>13</td>
<td></td>
<td>15.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brigade3</td>
<td>2</td>
<td></td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brigade4</td>
<td>13</td>
<td></td>
<td>15.5</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>8</td>
<td>84</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

4.11.1: Scoring of responses

The structure of the survey was similar to the TVET Learners survey (see Appendix B). A summary of responses to the survey is provided above. This was done by summing up associated items of the sections of the questionnaire. The sections and their associated abbreviations are shown in Table 4.16 below:

Table 4.16: Sections of the TVET Lecturers’ survey

<table>
<thead>
<tr>
<th>Section number</th>
<th>Section of the survey</th>
<th>Abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TVET Curriculum</td>
<td>TVETCrlm</td>
</tr>
<tr>
<td>2</td>
<td>Course Content</td>
<td>CourseCont</td>
</tr>
<tr>
<td>3</td>
<td>Course Resources</td>
<td>CourseRes</td>
</tr>
<tr>
<td>4</td>
<td>Course Instruction/Evaluation Methods</td>
<td>CourseInst</td>
</tr>
<tr>
<td>5</td>
<td>Graduation Requirements/Employment Requirements</td>
<td>GradReq</td>
</tr>
<tr>
<td>6</td>
<td>Work Term</td>
<td>Workterm</td>
</tr>
<tr>
<td>7</td>
<td>Experience, job satisfaction (yourself)</td>
<td>ExpJobSat</td>
</tr>
</tbody>
</table>

The mean scores for each item in the section were aggregated to form a group mean. The seven group means allowed comparison between the sections. An overview of these sections indicates that experience/job satisfaction has recorded the highest mean score of 4.42 followed by TVET curriculum 4.00. Work term and course content recorded the third and fourth highest mean scores of 3.54 and 3.53 respectively. The lowest mean scores were recorded for sections 5 (Graduation Requirements/Employment Requirements) and section 3 (Course Resources), section 4 (Course Instruction/Evaluation Methods) with 3.44, 3.30 and 3.29 respectively. The seven section mean scores are represented in Figure 4.2 below:
Figure 4.2: Mean scores for the seven sections of TVET Lecturers’ survey

![Bar chart showing mean scores for seven sections of TVET Lecturers' survey](chart.png)

Min score = 1, max score = 5, n = 84

Figure 4.3 indicates that lecturers were positive with the TVET curriculum they were offering and were also satisfied with their job. They were also positive with the overall work term to deliver the curriculum. They were however less positive with the instructional methodologies and the resources available to deliver the programs.

Table 4.17 below provides a summary of mean scores; standard deviations and statistical differences are noted in some sections.

Table 4.17: Mean scores and SD for sections 1-7 of TVET Lecturers’ survey

<table>
<thead>
<tr>
<th>Sections</th>
<th>Group Mean score</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) TVET Curriculum (TVETCrlm)</td>
<td>4.00</td>
<td>.695</td>
</tr>
<tr>
<td>2) Course Content (CourseCont)</td>
<td>3.53</td>
<td>.566</td>
</tr>
<tr>
<td>3) Course Resources (CourseRes)</td>
<td>3.30</td>
<td>.750</td>
</tr>
<tr>
<td>4) Course Instruction/Evaluation Methods (CourseInst)</td>
<td>3.29</td>
<td>.793</td>
</tr>
<tr>
<td>5) Graduation Requirements/Employment Requirements (GradReq)</td>
<td>3.44</td>
<td>1.019</td>
</tr>
<tr>
<td>6) Work Term (Workterm)</td>
<td>3.54</td>
<td>.696</td>
</tr>
<tr>
<td>7) Experience, job satisfaction (yourself)(ExpJobSat)</td>
<td>4.42</td>
<td>.897</td>
</tr>
</tbody>
</table>

Min score = 1, max score = 5, n = 84

4.11.2 Comparison of means using ANOVA

A one way repeated measures ANOVA was conducted to establish TVET Lecturers’ perceptions on practices in Botswana’s TVET institutions using a questionnaire with seven sections. Means and standard deviations are presented in Table 4.17 above. This was done to allow comparison within sections to determine lecturers’ perceptions with
regards to some practices in Botswana TVET institutions. There was statistically significant difference between sections of the survey (p=.00).

Statistically significant difference was noted between the following sections: 1 and 2; 1 and 3; 1 and 4; 1 and 5; 1 and 6. Also noted between sections 2 and 7; sections 3 and 7; sections 4 and 7; sections 5 and 7; sections 6 and 7. Generally this is an indication that TVET Lecturers are positive with the overall TVET curriculum but not so with course content, resources, instructional methods to prepare learners for the world of work as well as the duration (work term) of some of the courses.

<table>
<thead>
<tr>
<th>Sections</th>
<th>Other sections compared with</th>
<th>Mean difference</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>.52*</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>.71*</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>.73*</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>.57*</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>.50*</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>-.32</td>
<td>.36</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>.19</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>.21</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>.05</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>-.02</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>-.82*</td>
<td>.00</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>.02</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>-.14</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>-.21</td>
<td>.40</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>-1.04*</td>
<td>.00</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>-.16</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>-.23</td>
<td>.33</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>-1.06*</td>
<td>.00</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>-.07</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>-.90*</td>
<td>.00</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>-.83*</td>
<td>.00</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>-.32</td>
<td>.36</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>-.82*</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>-1.04*</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>-1.06*</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>-.90*</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>-.83*</td>
<td>.00</td>
</tr>
</tbody>
</table>

* = significant difference at .05 level

There was statistically significant difference between section (7) and sections 2, 3, 4, 5, 6. this implies that TVET Lecturers were satisfied with their job but not so with course
content, resources, instructional methods to deliver the courses to prepare learners for the world of work as well as the course duration. Following the statistically significant difference observed between sections of TVET Lecturers’ survey, Appendix D gives an overview of sections with their list of items, means and standard deviations.

The proceeding section of this report will further investigate results from section 1 responses following ANOVA results carried out to compare mean scores between sections of the survey.

4.11.3: TVET Lecturers’ responses on section 1 (TVET Curriculum) of the survey

Section 4.12.3 of TVET Lecturers’ survey comprised six items (Appendix C). The following is a summary of TVET Lecturers’ responses to section 1 of the survey. Generally, an overview of item mean scores indicated that TVET Lecturers were positive about this section of the survey with regards to TVET practices in government TVET institutions in Botswana. Mean scores for each item in the section were calculated. Item 2 recorded the highest mean score of 4.10 followed by item 1 with 4.08, then item 3 and item 6 both recording 3.88. Item 4 recorded the mean score of 3.86. Item 5 had the least mean score of 3.63.

To determine if there was statistically significant difference between the highest and lowest mean scores for section 1, analysis of variance was carried out and the results are summarised. One-way repeated measures ANOVA was conducted to compare mean scores of items measuring the perception of TVET Lecturers of the effectiveness of curriculum in Botswana TVET institutions. There was statistically significant difference between items 1 (whether learners were provided with course outline with relevant information that they needed to know/ have when they enrolled) and 5 (whether the course length is sufficient to produce graduates with the required entry-level knowledge and/or skill development in the work field) (p=0.04). This results show that TVET Lecturers are somewhat happy with the curriculum but not so with the duration of training.

The following is a summary of their responses. Item 1 and its associated sub-items indicated that lecturers feel strongly about item (e) with a mean score of 4.54. The second highest mean was for item (c) 4.26 followed by item (d) 4.25. The least mean scores were
noted for items (a), (g), (b) and (h) 4.18; 4.01; 4.00 and 3.91 respectively. To determine if there was a statistically significant difference between the highest and lowest mean scores for item 1, analysis of variance was carried out.

One-way repeated means ANOVA was performed to get an insight of TVET Lecturers’ responses to the effectiveness of TVET curriculum in Botswana government TVET offering institutions. Statistically significant difference was noted between sub-items 2 and 5; 3 and 6; 4 and 6; 5 and 6/7/8 where (p=.00).

Sub item 1a solicited information from the lecturers as to whether within the outline given to the learners when they enrolled, entry requirements for their course was outlined. A summary of responses is provided in Table 4.19 below:

<table>
<thead>
<tr>
<th>Responses to sub-sections</th>
<th>Sub-sections to item 1 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1a</td>
</tr>
<tr>
<td>SD</td>
<td>2.4</td>
</tr>
<tr>
<td>D</td>
<td>9.5</td>
</tr>
<tr>
<td>NS</td>
<td>2.4</td>
</tr>
<tr>
<td>A</td>
<td>36.9</td>
</tr>
<tr>
<td>SA</td>
<td>46.4</td>
</tr>
</tbody>
</table>

Table 4.19: Responses to item 1 sub-sections

Table 4.20 above gives an overview of responses to item 1 sub-sections. Generally lecturers were positive with the content of the course outline with regards to all the necessary information that needs to be communicated to the learners. There were only a few cases directed to course requirements, (sub items 1a, b, f, g and h; Appendix C) where some lecturers strongly disagreed when asked about the information in the course outline.

To establish if there is statistically significant difference between mean scores within item 1 and whether most responses came from Technical Colleges or Brigades, an ANOVA within-subjects test was carried out. There was no statistically significant difference between responses from the TVET institutions in Botswana. That is, TVET Lecturers from both categories of TVET Institutions were in agreement about the relevance of the TVET Curriculum.
### 4.11.3.1: Results from sub-item 5

A summary of responses for item 5 indicate that some positivity from the TVET Lecturers where the largest proportion of 44% agreed that the course duration is sufficient enough to produce competent graduates for the world of work compared to only 16.7% who disagreed. A further investigation into whether TVET Lecturers across two types of provision (Technical Colleges and Brigades) differ in opinions, cross tabulation was carried. An overview of results is presented in Table 4.20 below:

#### Table 4.20: Summary of responses to item 5

<table>
<thead>
<tr>
<th>College type</th>
<th>Levels of responses</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Not sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical colleges</td>
<td></td>
<td>1(1.9%)</td>
<td>11(20.8%)</td>
<td>10(18.9%)</td>
<td>21(39.6%)</td>
<td>10(18.9%)</td>
<td>53</td>
</tr>
<tr>
<td>Brigades</td>
<td></td>
<td>3(9.7%)</td>
<td>3(9.7%)</td>
<td>0</td>
<td>16(51.6%)</td>
<td>9(29%)</td>
<td>31</td>
</tr>
</tbody>
</table>

*Min score =1, max score=5, n=84*

Although there were some positivity across government TVET institutions in Botswana, Table 4.20 above shows that TVET Lecturers from Botswana brigades were more positive about item 5 compared to those in technical colleges. There was however no significant difference noted between their responses.

### 4.11.4: TVET Lecturers’ responses on section 2 (Course Content) of the survey

Section 2 of the survey (7 items) collected information on TVET Lecturers’ perception on course content. Descriptive statistics were calculated for each item. TVET Lecturers strongly felt there were some areas within the curriculum that needed revising (item 11 mean of 4.12). They however felt that all competencies needed to be executed were included within different units of unit specification (item 9). They were satisfied with the time allocated for each unit (item 8 (b) with mean 3.92.) and the sequencing training and addressed pre and co requisites (item 7 with the mean score of 3.69). Item 12, lecturers responded with a mean score of 3.53. The least mean scores were recorded for items 8 (c), 10 and 8 (a) scoring 3.22, 2.99 and 2.98 respectively.
4.11.5 Analysis of responses to section 3 (Course Resources) of the TVET Lecturers’ survey

Section 3 concerned course content. It had five items each soliciting areas touching on curriculum issues. TVET Lecturers were positive about the general tools and equipment available for learners during practical sessions (item 13 mean 3.46). They were however less positive about the appropriate technologies used to enhance training (item 16 mean 2.71).

4.11.6 Analysis of responses to Section 4 (Course Instruction/Evaluation methods) of the TVET Lecturer survey

Section 4 of the survey (4 items) looked into the course instruction/evaluation methods. TVET Lecturers felt there were specific units within their courses which require competencies than those held by the current lecturing staff (item 20 mean 3.84). They however were positive that the assessment methods were adequate to expose TVET Learners to real life situations. TVET Lecturers felt more could be done with regards to learning materials to expose TVET Learners to real life situations (item 18 mean 3.69).

4.11.7: Analysis of responses to Section 5 (Graduation requirements/Employment requirements) of the TVET Lecturer survey

Section 5 of the survey (2 items) solicited information about graduation / employment requirements. TVET Lecturers responded with a mean score of 3.46 when asked whether the passing of grades was sufficient for successful completion of the course. The same mean score was awarded to their responses with regards to whether the passing of grades is sufficient enough for the TVET Learners to obtain a certificate.

4.11.8: Analysis of responses to Section 6 (Work Term) of the TVET Lecturer survey

Section 6 of the survey (8 items) captured information about the work term. TVET Lecturers’ responses indicated that they felt courses offered in government TVET
institutions equip learners with adequate competencies needed in the job market (item 28 mean 4.04 and item 29 mean 3.99). They were however not as positive as to whether the employers were satisfied with the skills TVET graduates possess at the end of their training (item 27 mean 3.24). TVET Lecturers were concerned about employment opportunities for graduates upon completion (item 30 mean 3.22).

4.11.9: Analysis of responses for section 7 (Experience, job satisfaction - yourself) of the survey

The last section of the survey (Section 7–1 item) was about experience and job satisfaction. TVET Lecturers were somewhat positive with the skills and competencies they possess (item 32 mean 4.42).

4.12: Summary of TVET Lecturers’ responses

The structure of the questionnaire used for this stakeholder group was similar to that for TVET Learners. An analysis similar to that used for the TVET Learners’ questionnaires was also adopted for TVET Lecturers. Statistically significant differences were noted between some sections as summarised in Table 4.16 above.

Statistically significant differences in means indicated that generally TVET Lecturers across all TVET institutions in Botswana were somewhat satisfied with their jobs. Although they were positive about their jobs, they were however not so positive with the resources available to effectively deliver the courses and the instructional designs employed. Further investigations into the two sections, course resources and course instruction/evaluation methods, revealed that TVET Lecturers felt that the resources at their disposal were limited and that hindered effective delivery of TVET programs. This at the same time compromises the quality of training offered which at the end hinders the government effort in an attempt to provide an efficient and effective market driven TVET.

The perceptions of TVET Lecturers across the two types of TVET Institutions (Brigades with apprenticeship training and Technical Colleges with BTEP [Botswana Technical Education Programs]) had similar perceptions about the overall TVET practices in Botswana, agreeing that there is a need to harmonise training. They also concurred that there is need to enhance training with up-to-date learning resources so that the system could be made more effective.
4.13: Comparison of TVET Learners and TVET Lecturers survey responses

To establish if there were differences in the perceptions of TVET Learners and Lecturers to TVET practices in government TVET institutions, responses from both the stakeholder groups were compared in Table 4.21 below:

Table 4.21: Comparison of mean scores (TVET Learners and TVET Lecturers)

<table>
<thead>
<tr>
<th>Sections of the survey</th>
<th>Grand mean scores</th>
<th>Sig difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TVET Learners</td>
<td>TVET Lecturers</td>
</tr>
<tr>
<td>1. TVET Curriculum (your vocational course)</td>
<td>3.75</td>
<td>4.00</td>
</tr>
<tr>
<td>2. Course Content</td>
<td>3.42</td>
<td>3.53</td>
</tr>
<tr>
<td>3. Course Resources</td>
<td>2.96</td>
<td>3.30</td>
</tr>
<tr>
<td>4. Course Instruction/Evaluation Methods</td>
<td>3.52</td>
<td>3.29</td>
</tr>
<tr>
<td>5. Graduation Requirements/Employment Requirements</td>
<td>3.55</td>
<td>3.44</td>
</tr>
<tr>
<td>6. Work Term</td>
<td>3.47</td>
<td>3.54</td>
</tr>
<tr>
<td>7. Job Satisfaction (program satisfaction)</td>
<td>3.87</td>
<td>3.54</td>
</tr>
</tbody>
</table>

From the Table it can be concluded that TVET Learners and TVET Lecturers have concerns about some aspects of TVET practices in government institutions providing qualification levels 1 to 3. For learners, concerns are with the course resources (mean score 2.96), course content (mean score 3.42) and with their work term (mean score 3.47). Similarly for lecturers, concerns are with course instruction/evaluation methods (mean score 3.29), course resources (mean score 3.30) and graduation/employment requirements (mean score of 3.44). As reflected in Table 4.22 above, these aspects of TVET have been rated low by both TVET Learners and TVET Lecturers. Statistically significant difference is observed between sections. For example; learners’ course satisfaction and lecturers’ job satisfaction.

For the TVET Learners, reasons could be that technology is only minimally used during training. Also, direct communication with TVET institutions revealed that less experienced lecturers are used to deliver programs with equipment in which they have limited competency. This would have a negative impact on learning. With course content, it is important that TVET Learners feel that there is relevance to their future employment. If they feel what they are learning has no link with the workplace, then the system is doomed to fail because modern TVET is market orientated. At the same time, the time
taken for training is another important factor. Some programs (BTEP) take time to complete and to proceed to the next level of training.

With TVET Lecturers, their perceptions towards instructional design/evaluation methods could be that TVET Learners aren’t given enough exposure to industry experience (work based learning) during the work term. There is too much theory (most time is spent in the classrooms) at the expense of practicals (less time spent in the industry) for hands on experience. Other reasons could be that not enough technology (course resources) is used in delivering training and that some of the resources are outdated.

**4.14: Quantitative data analysis for employers**

This sub-section captures data collected from employer groups in Botswana. Only 3 industries were represented in the limited response of only seven questionnaire returns. Two (2) were from the mining industry, three (3) from hospitality & tourism and two (2) from ICT. A summary of responses is provided in Table 4.22 below:

<table>
<thead>
<tr>
<th>Employer group</th>
<th>Total no of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>2</td>
</tr>
<tr>
<td>Hospitality &amp; Tourism</td>
<td>3</td>
</tr>
<tr>
<td>ICT</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>

**4.14.1: Scoring of responses**

The questionnaire is included in Appendix D. Only 7 questionnaires were returned. Botswana has small industry base, so the low response rate is not surprising. Follow ups (telephone and e-mails) to other industry groups were made without success. Descriptive statistics were used to understand the general characteristics of the employers. For anonymity, employers were de-identified. These industry represented are from mining, ICT and hospitality and tourism. The summary of the employer responses to administrative information are given in Table 4.23 below:
Table 4.23: Employer responses to section one of the survey

<table>
<thead>
<tr>
<th>Questions</th>
<th>Employers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Do you employ vocational training Graduates</td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>a) Yes</td>
<td>√ √ √ √ √ √ √</td>
</tr>
<tr>
<td>b) No</td>
<td></td>
</tr>
<tr>
<td>2) (If yes), how many vocational training graduates have you employed in the last 5 years?</td>
<td></td>
</tr>
<tr>
<td>a) 0 – 5</td>
<td>√ √ √ √</td>
</tr>
<tr>
<td>b) 6 – 10</td>
<td></td>
</tr>
<tr>
<td>c) 11 – 15</td>
<td></td>
</tr>
<tr>
<td>d) 16 – 20</td>
<td></td>
</tr>
<tr>
<td>e) 20 plus</td>
<td>√</td>
</tr>
<tr>
<td>3) How do you recruit Vocational Graduates?</td>
<td></td>
</tr>
<tr>
<td>a) Media Advertisements</td>
<td>√ √ √ √ √</td>
</tr>
<tr>
<td>b) Networking</td>
<td></td>
</tr>
<tr>
<td>c) Recruitment Agencies</td>
<td></td>
</tr>
<tr>
<td>d) Other (please specify)</td>
<td>√ √</td>
</tr>
<tr>
<td>4) At what level do you employ these Vocational Training graduates?</td>
<td></td>
</tr>
<tr>
<td>a) Skilled level</td>
<td>√ √ √ √ √ √</td>
</tr>
<tr>
<td>b) Semi – skilled level</td>
<td>√ √ √ √ √ √</td>
</tr>
<tr>
<td>c) Labourers</td>
<td>√</td>
</tr>
<tr>
<td>d) Trainees</td>
<td>√ √</td>
</tr>
<tr>
<td>e) Other (please specify)</td>
<td></td>
</tr>
<tr>
<td>5) In what areas of specialisation do you employ Vocational Training Graduates?</td>
<td></td>
</tr>
<tr>
<td>a) Construction trades, craft, trade and industrial</td>
<td>√</td>
</tr>
<tr>
<td>b) Commercial, clerical business and public administration</td>
<td></td>
</tr>
<tr>
<td>c) Agriculture, forestry and fisheries</td>
<td></td>
</tr>
<tr>
<td>d) Health and health related</td>
<td></td>
</tr>
<tr>
<td>e) ICT</td>
<td>√</td>
</tr>
<tr>
<td>f) Hospitality and tourism</td>
<td>√ √</td>
</tr>
</tbody>
</table>

Key:
1 = Mine1
2 = Hotel1
3 = Hotel & Tourism3
4 = Hotel2
5 = ITCompany1
6 = ITCompany2
7 = Mine2

Table 4.23 above gave an overview of responses to administrative information on the employer survey. It is shown that almost all the employers indicated that they have been employing TVET graduates for more than 5 years and some for than 20 years using mostly media advertisement to recruit them. The skills that these graduates were expected
to possess as they enter the employment market are captured in Table 4.23 above as well as the industry areas in which they are employed.

The next section of the survey sought employer perception in regards to the courses offered in Botswana government TVET institutions. As with TVET Learners and TVET Lecturers’ survey, the employer responses were captured on the same 5 point Likert scale. The response categories ranged from; Strongly agree (SA); Agree (A); Not sure (NS); Disagree (D); Strongly disagree (SD).

This section had 12 items. Responses to individual items will be displayed in tables and graphs below. **Question 6** asked whether the employers hired graduates trained in a different field other than the primary business of their companies. The responses were as follows:

**Table 4.24: Frequency of responses to question 6**

<table>
<thead>
<tr>
<th>Level of responses</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD</td>
<td>3</td>
<td>42.9</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NS</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A</td>
<td>3</td>
<td>42.9</td>
</tr>
<tr>
<td>SA</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>7</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Key:*  
SD= Strongly Disagree  
D= Disagree  
NS= Not Sure  
A= Agree  
SA= Strongly Agree

Table 4.24 indicated that 42.9% of the employers did not agree that they hired graduates from a different field other than what the company’s primary business. The very same number of employers agreed. Only 14.3% strongly agreed. A follow up question was asked requesting the employers to elaborate on their responses to question 6 above. Their choices were:

1) We need people with relevant skills only;  
2) We don’t want to waste time in training them in the required skills.

With 3 (42.9%) indicating that they strongly disagreed, their responses to question 7 reflected that 28.6% of them felt they needed people with relevant skills only. The remaining 14.3% felt that they don’t want to waste time in training them in their required skills.
Asked how they would rate the level of competence of vocational training graduates in performing their assigned responsibilities. They (employers) were to choose from:

1) High;
2) Fair;
3) Low;
4) Poor.

Their responses as captured in Figure 4.4 below indicated that the majority 4 (57.1%) felt that the competence was fair with 2 (28.6%) rating their competence level as high. Only 14.3% felt that the TVET graduates’ were not competent enough and rated them as ‘low’.

An overview is provided in Figure 4.3 below:

**Figure 4.3: Frequency of responses to question 8**

<table>
<thead>
<tr>
<th>Level of responses</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>NS</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>A</td>
<td>5</td>
<td>71.4</td>
</tr>
<tr>
<td>SA</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

**Question 9** requested information as to whether the TVET graduates employed by these employers graduated from Botswana Training Authority’s accredited TVET institutions. Their responses were summarised in Table 4.25 below.

**Table 4.25: Frequency of responses to question 9**

<table>
<thead>
<tr>
<th>Level of responses</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>NS</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>A</td>
<td>5</td>
<td>71.4</td>
</tr>
<tr>
<td>SA</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

*Key:
SD= Strongly disagree    NS= Not Sure    A= Agree
D= Disagree            SA= Strongly Agree*

The majority (71.4%) of the employers indicated that their employees came from Botswana Training Authority (BOTA) accredited TVET institutions. Asked whether they
were satisfied with the skills these TVET graduates possess, they responded as follows in Figure 4.4 below:

**Figure 4.4: Frequency of responses to question 10**

![Bar chart showing frequencies of responses](chart.png)

*Key:*
- SD = Strongly Disagree
- D = Disagree
- NS = Not Sure
- A = Agree
- SA = Strongly Agree

A majority (57.1%) of the employers indicated (agreed) that they were satisfied with the skills of their employees who graduated from government TVET institutions. Only 14.3% strongly agreed that they were satisfied with the skills the employees had. The same number of employers indicated that they disagreed and others (another 14.3%) were not sure.

The next item (11) asked whether the employers felt the TVET graduates were trainable and adaptable. All the employers (57.1% strongly agreed, 42.9% agreed) agree that the graduates were trainable and adaptable. Item 12 inquired into whether the employers often send the TVET graduates employed for further training to improve their skill level. The employers were positive in this regard in that they all agreed that they do send the TVET graduates for up-skilling (57.1% agreed, 42.9% strongly agreed). Item 13 asked whether employers in Botswana have TVET graduates from outside the country. Their responses are captured in Figure 4.5 below:
About 42.9% confirm that they do have TVET graduates from outside Botswana. The remaining 57.2% indicated otherwise. Item 14 asked about whether the level of competency of TVET graduates from outside Botswana was often higher compared to those trained in Botswana. Table 4.26 below captured the employers’ responses.

**Table 4.26: Frequency of responses to question 14**

<table>
<thead>
<tr>
<th>Level of responses</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>28.6</td>
</tr>
<tr>
<td>NS</td>
<td>2</td>
<td>28.6</td>
</tr>
<tr>
<td>A</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>SA</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>7</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Key:
- SD = Strongly Disagree
- D = Disagree
- NS = Not Sure
- A = Agree
- SA = Strongly Agree

The majority (71.5%) of the employers disagreed that the level of competency of TVET graduates from Botswana TVET institutions was lower compared to those from outside Botswana. Item 15 asked the employers whether they provide work experience for TVET graduates who were not employed in their organisations. Their responses were summarised in Figure 4.6 below:
Figure 4.6: Frequency of responses to question 15

<table>
<thead>
<tr>
<th>Key:</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD= Strongly Disagree</td>
</tr>
<tr>
<td>D= Disagree</td>
</tr>
<tr>
<td>NS= Not Sure</td>
</tr>
<tr>
<td>A= Agree</td>
</tr>
<tr>
<td>SA= Strongly Agree</td>
</tr>
</tbody>
</table>

The majority of the employers indicated that they did provide on-the-job training for those TVET graduates who were currently not their employees. Asked whether they used to employ TVET graduates in the past, the employers (100%) indicated that they still employ them.

The employer perception towards the effectiveness of the current TVET practices in Botswana is fairly positive. This goes against TVET Learners and Lecturers perception towards the overall TVET system. The researcher acknowledges that TVET system in Botswana is in its infant stage and that the country has a small industry base.

4.15: Summary of chapter 4

TVET Learners, TVET Lecturers and Employers in Botswana generally rated the Botswana TVET system as fair. TVET Learners and TVET Lecturers indicated dissatisfaction with program content (mean scores: 3.42 for learners; 3.53 for lecturers), program resources (2.96 for learners: 3.30 for lecturers) and program instruction/evaluation methods (3.52 for learners: 3.29 for lecturers). TVET Learners however indicated overall satisfaction in their program of choice. TVET Lecturers indicated overall satisfaction with their job.

The general Employer perception of overall TVET practices in Botswana was positive. They pointed out that most of the TVET graduates in their organisation graduated from institutions accredited with Botswana Training Authority (BOTA). Only a few (14.3%) indicated they were less satisfied with the skills of their employees who graduated from
Government TVET institutions. Generally TVET stakeholders saw the potential in Botswana TVET practices and pointed to the areas of satisfaction and where improvement is needed for the system’s overall effectiveness.

Chapter 5 below discusses qualitative data collected.
Chapter 5: Qualitative data analysis

5: Introduction
This section provides an analysis of qualitative data collected from TVET stakeholder groups in Botswana. The data are responses to open-ended questions from the TVET Learners’ survey, TVET Lecturers’ survey, and employers’ survey (see Appendices B - D respectively) and results from interviews with six senior government officials.

5.1: TVET Learners’ responses to open ended questions
Detailed background information about this stakeholder group and the survey were discussed in section 4.2. Three sections of the TVET Learners’ survey requested free responses. The sections were program instruction/evaluation methods (section five), graduation/employment requirements (section six), and information regarding TVET Learners’ training that might have been omitted elsewhere in the survey. Summaries of responses are provided below:

5.2: Summary of open responses to sections of TVET Learners’ survey
TVET Learners were asked if there were any additional instructional methods that they would suggest for program delivery. The three prominent issues were:

1) resources (material and human);
2) exposure to work based learning;
3) TVET assessment systems.
Details of TVET Learners’ views on these three areas are captured below.

5.2.1: Resources
Typical responses which touched on resources, especially the use of ICT during facilitation, were exemplified by:

*The teaching instruction must be reinforced with appropriate technologies as current software and hardware, specialised equipment, textbooks, software or resources which could strengthen the delivery of our course (117).*

Another TVET Learner stated:
We should have access to computers for more research for effective program delivery (l101).

And another stated that that more time should be allocated to the:

use of computers in the workshop with internet to keep going with the latest inventions (l277).

Availability of ICT resources to facilitate training is critical to modern TVET. One learner added that:

The computer software should be upgraded regularly. Internet is also very poor with some computer labs not having audio materials. If this could be attended to, our work would be made easier and many candidates will pass (l74).

Touching on the issues of facilitation, one TVET Learner felt that for:

E-Learning: the colleges could come up with an online program specific to each course linking trainees with their tutors even outside the classroom and the college boarders. It could be used to post assignments and notes and close the gaps left by the existing internal e-mail system (l305).

Modern TVET is characterised by the use of ICT in training and therefore exclusion or limited access is a major impediment to efficiency and effectiveness in any training system. With new modes of teaching and learning (blended, flexible and online), the use of ICT has become vital in all aspects of education and training (Maclean & Wilson, 2009; Rojewski, 2009). NPVET (1997) envisioned varied modes of delivery in Botswana for all TVET programs to expose TVET Learners to the use of modern technology as well as competence in information handling (Republic-of-Botswana, 1997). It is therefore imperative that those responsible for curriculum design and delivery take into account the views of TVET Learners on instruction/delivery practices in TVET institutions, especially BOTA accredited ones.

On the issues of human resources, particularly lecturing staff, Wallenborn (2010) highlights the need to have a well-qualified TVET teaching workforce. In the views of many, this is one of the drivers of success of TVET systems. Within Botswana TVET institutions this is not an exception. One TVET learner indicated:

Provide us with lecturers who know a lot about this program (l298)
Another said:

*Have qualified lecturers (l243).*

The researcher acknowledges and recognises the impact of varying personal experiences of TVET Lecturers in the understanding and expansion of the TVET programs in Botswana. It is understood that TVET lecturer qualifications relate to both the set of vocational skills and knowledge, and the set of pedagogical skills and knowledge.

### 5.2.2: Exposure to work based learning

Work-based learning experiences according to TVET-Australia (2011) recognise “work as an authentic learning environment as well as being an enabling device for learning” (p. 6). It therefore provides learners with an opportunity to relate classroom learning with real life experiences. With regards to Botswana TVET institutions, TVET Learners felt more has to be done in terms of exposing them to the work environment. One TVET learner indicated that:

*More practical should be implemented in the delivery of this program (l86).*

One stated:

*Give trainees a chance to explore their experiences by taking them to attachments to gain more skills about the course (l114).*

Another felt that:

*Candidates should be exposed more to practical work as this will make it easier for them to adapt quickly to the way things are done in the industry (l269).*

Another stated:

*I suggest that there should be more practicals in this course, so that we can complete the course with more experience (l313).*

Winch (2013) has discussed apprenticeship schemes as one of the ways in which TVET could be made attractive. He highly recommended apprenticeship schemes with strong educational and personal development elements as an alternative to school based TVET.

It is important to note that the Botswana government has adopted the dual training system in its TVET provisions where classroom teaching is combined with industrial attachment. Even though there were noticeable efforts by the local TVET institutions in this regard,
the feelings were that time spent in industry gaining experience was too limited for
learners to develop skills. As one TVET learner indicated:

*Re-consider time allocated for work experience. It is unbelievably short that the candidates don’t get enough time to familiarise themselves with how the industry operates* (I271).

Another felt that:

*Work experience duration is not enough. At least a few more months would be adequate to gain the required experience* (I302).

One TVET Learner has gone to the extent of criticising the new Botswana Technical Education Programs (BTEP) by indicating that:

*The BTEP is not yet recognised by the industry, so the government should lead by example and hire BTEP graduates since it is its initiative* (I92).

As Winch (2013) highlights, the more attractive TVET is to employers, the more attractive it would be to the individuals and to other sectors of society. The view of the government of its TVET practices should be aligned to the view of the employers in local TVET practices. It is essential therefore that the government strengthens relationships with employers and employer groups thus involving them into planning and strategies for improving the effectiveness of TVET.

### 5.2.3: The assessment system

Global directions in TVET presented nations with the challenges of alignment of skills development with industry standards (Mansfield, 2004). An adequate flexible skills base need to be produced that would meet the ever changing demands of knowledge-based economies. As a result, NPVET mandated that criterion referenced assessment be implemented, which is based on the achievement of competency levels in skill areas.

This new form of assessment within Botswana TVET has been met with a mixed response and consequently varied levels of implementation. Competency based assessment has been adopted for all BTEP related assessments but the norm referenced assessment for apprentice courses still exists. The use of ‘achieved or not yet achieved’ for assessment outcomes instead of grades is concerning to learners. One TVET Learner said:
Another one indicated that:

*The method of grading should be changed from achieved to percentages and pass, credit, merit/distinction, not 100% (1220).*

Competency-based assessment requires learners to demonstrate their capabilities in such a way that is contextualised to the work place. One TVET Learner stated that:

*The allocation of marks in every unit would be better as it would help make Learners compete for higher marks. The way students are graded after assessments don’t motivate candidates to compete among themselves. The fact that they are given 3 attempts in assessments can make them to relax.*

One suggested that:

*The use of grading system must change and re-introduce the percentage system*

In summary, when asked whether they had recommendations for additional assessment methods which might aid in testing learner competency, the majority of TVET Learners felt that the exposure to work based learning and an extended period of industrial attachment would enable them be more work ready on graduation. They also believe this would increase their competencies as they learn on the job. On qualifications and experience of their lecturers, most of the respondents indicated that they prefer lecturers with a degree and higher. Those who considered diploma holders indicated that they should have at least several years of industry experience as well as a teaching qualification. The present situation is that TVET Lecturers in Botswana have a range of vocational qualifications (university and/or TVET) and teaching qualifications. It is also expected that they have significant industry experience.

### 5.3: TVET Lecturers’ responses to open ended questions

The summary of responses for TVET Lecturers’ is similar in format to that used for TVET Learners in section 4.5.1. Four sections elicited TVET Lecturers’ open ended responses and the last one was the general inquiry into the TVET Lecturers’ thoughts and well-being. These sections were course content, course instruction/evaluation methods, the
work term and about TVET Lecturers’ courses and the overall job satisfaction. Their responses to these sections are captured below.

5.3.1: Summary of open responses to section two of TVET Lecturers’ survey

TVET Lecturers were asked if there were areas of the curriculum (i.e. specific learning objectives) that need to be revised, removed or added to the courses were involved with. The prominent areas of concern were:

1) the current TVET curriculum;
2) assessment system;
3) industrial attachment;

Detailed TVET Lecturers’ views on the above are captured below.

5.3.1.1: The need to revise the current TVET curriculum

A significant number of TVET Lecturers’ felt strongly that there was need to revise the curriculum. One TVET Lecturer indicated that:

*Most of the units need to be revised because they have not been revised for over 10 years. This could mean that the information might be overtaken by events (L25).*

Another one was even more specific and stated:

*BTEP runs for 5 years before the next review. Some go beyond 5 years (L57)*

Another argued that:

*Some of the units are out-dated and the content has to be upgraded or overhauled (L5).*

Whilst another pointed out:

*For instance, some courses like tourism are not consistent so you will find that some units are not matching the current information or the overall course objective (L48).*
TVET Lecturers also noted the repetition of some units that cut across most courses and some of which lack relevancy. One TVET Lecturer stated out:

*Some units are repetitive (L59).*

Another indicated that:

*Repetition of some concepts across the modules needs to be removed (L69).*

Some enunciated the need for regular program review at least every 2 years. Constant program review as Morris (2012) confirm is an attempt to make these programs “competitive in domestic, regional and international labour markets through improved demand based TVET and internationally recognised qualifications” (p.1). It also improves the quality of instruction (Aring, 2011).

### 5.3.1.2: Assessment system

When commenting on issues of student grading, some TVET Lecturers felt that there is a need for government to re-introduce the previous grading system as the current system encourages lack of effort among TVET Learners. One TVET Lecturer wrote:

*What needs to be revised is to re-introduce the grading system. The current system renders students to be lazy (L78).*

As TVET Lecturers call for re-introduction of the previous norm-referenced grading system, one TVET Lecturer advised that exams need to consider market and industry needs.

### 5.3.1.3: Increase the duration for TVET Learners’ industrial attachment

As indicated earlier, a majority of TVET Learners raised the need to extend the period of work-based experience (industrial attachment). This need has been reiterated by the majority of TVET Lecturers. One TVET Lecturer stated that:

*Work experience for Learners needs to be increased (L50).*

Another indicated that:

*More practicals and work experience (attachment) need to be added (L4).*
Another reiterated:

*More time must be given to practical subjects as practice makes perfect as theories dictate (L2).*

The importance of work experience for TVET Learners is strongly emphasised in the literature (Aring, 2011; Smith, 2008). Work experience benefits TVET Learners, TVET institutions, the government and employers. For the learners, they engage themselves in a work situation gaining vocational experience; for TVET institutions, they forge relationships with employers therefore promoting and marketing their courses. With TVET in developing countries characterised as supply driven, with very little industry involvement, this partnership is important as it assists in aligning the curricula with the skills demands of the labour market (NICHE, 2010). This is viewed as a means to facilitate effective recruitment processes. For the employers, their status is somehow enhanced in comparison with other employers (Smith, 2008). “Recruitment is also affected by the reputation that develops amongst students for organisations in which they have first-hand experience or where they learn of the experiences of their colleagues” (p.6).

5.4: Summary of responses to section four of TVET Lecturers’ survey

TVET Lecturers’ views were sought with regards to what qualification and industry experience is required to be a competent lecturer. It is instructive however to discuss the qualification and experience the lecturers surveyed possessed. The data revealed that the respondents had one or more of four qualifications. These were the National Craft Certificate (NCC) with industry experience as the lowest qualification to Master’s and PhD or Doctoral Degrees as the highest qualifications for TVET Lecturers. Other qualifications were diplomas and bachelor’s degrees. TVET Lecturers were also asked about the qualifications lecturers in TVET institutions should have. Representation of qualifications indicated that thirty one percent (26) of TVET Lecturers preferred those with degree in their industry areas while the other twenty one percent (18) indicated diploma. Only ten percent (8) stated master’s degree as their preferred qualification. Those who stated NCC with industrial experience made up ten percent of TVET Lecturers population. These quotations were typical:
Relevant qualification with experience (L11).

Diploma or higher with industrial experience (L31).

Diploma and above with teaching and industrial experience (L61).

Degree with years of experience (L77/80/84).

Masters with 5 years of experience in vocational Education (L75).
Master’s degree/PhD (L53).

The provision of quality training of instructors and lecturers in TVET has become fundamentally important to address concerns over low qualification levels and lack of industrial experience (Republic-of-Botswana, 1997b). The researcher acknowledges the establishment of a teacher education program in 1999 to provide appropriate training for Botswana’s TVET Lecturers. This was to enable trained lecturers to “adjust to standards and assessment criteria as well as to adapt to technological and economic changes” (p. 21).

It is also important to note that minimum entry qualification into this diploma program is a recognised Diploma or Degree in a relevant vocational field (industry area). The duration is one and half year’s full time (see chapter 2, Development of TVET in Botswana).

5.4.1: Additional assessment methods to ensure learner competency

Assessment issues in Botswana TVET, especially for Botswana Technical Education Programs (BTEP), are currently being debated. The majority of lecturers prefer testing and examinations and some prefer the new competency based assessment. The Quality Assurance and Assessment Unit (QAA) established in partnership with the Scottish Qualifications Authority are responsible for ensuring quality and delivery within the BTEP courses. The assessment for apprenticeship training remains with the initial testing and examinations conducted by Madirelo Testing and Training Centre (MTTC) in Gaborone under the Ministry of Labour and Home Affairs (MLHA).
Six themes emerged when TVET Lecturers were asked about whether they have recommendations for additional assessment methods which would ensure learner competency. These were:

1) TVET assessment system;
2) Periodic school based assessment;
3) Guest lecturers and industry tours;
4) Research and resources;
5) Performance projects and industrial attachment.

TVET Lecturers’ responses to individual themes above are discussed in detail below.

5.4.2: Assessment system

A small number of TVET Lecturers agreed that the existing assessment practices (competency based) especially for BTEP are not well received by TVET Learners. The BTEP adopted elements of outcomes-based training and they were to link the country’s TVET system with industry. Strong opinions were expressed:

*Continuous assessment should be part of the final exams. This would force learners’ to focus more on their studies (L25).*

*Assessment instruments for BTEP are not challenging candidates. They need to be reviewed (L60).*

Some TVET Lecturers were calling for a return to the previous norm-referenced assessment processes (as discussed in chapter 2; section 2.2.3). They suggested:

*Traditional ways of assessment where there were mark allocations (L7).*

*Grading system in terms of marks allocation for class activities, tests and exams. Lastly marks allocated for reports and assignments (L51).*

*BTEP-the current method of grading is really not applicable in some units; should write test that are graded as in NCC; Observation method is N/A (L65).*

*Grading system as opposed to the current system (L78).*

*The courses to be graded during assessment (i.e. marks to be allocated in order to measure candidates’ level of competence' (L83).*
Others proposed combinations of formative and summative assessment. These are representative:

- **Yes, students should be assessed in 2 ways: continuous assessment which contributes to the final mark (e.g. 40%) and should write final exams (L59).**

- **We should have continuous assessment to test trainees throughout the year (L24).**

- **Continuous assessment to contribute to the final exam (L26).**

The responses above indicated a strong opposition to competency-based assessment for BTEP. Perhaps lecturers have not been trained adequately in using competency-based assessment.

### 5.4.3: Periodic college based assessment

Regarding this theme, the data revealed that some form of college based assessment (continuous assessment) could be used to enhance learner competency in preparation for final assessments as well as establishing how well the TVET Learners feel about certain units within their courses. Only six percent (5 out of 84 respondents) made reference to this as a form of quality assurance measure. They felt:

- **Learners should be given questionnaires randomly from the learning materials to investigate their level understanding (L6).**

- **The course needs school based assessment which is to be included in the program (L38).**

- **Madirelo Testing and Training Centre (MTTC) to test our trainees with mock exams especially the completing groups (L14).**

This is a measure that can ensure quality throughout training. Irrespective of the number of responses received which made reference to this aspect, TVET Lecturers felt that this could be used as an on-going assessment for TVET Learners as they prepare for final assessments.
5.4.4: Performance based projects and industrial attachment

King (2011a) discussed why many TVET systems, especially in developing countries, fail as they strive to provide opportunities for skills utilisation. Less conducive environments and limited resources hamper these attempts. He stated that “…the provision of formal technical and vocational education is often so awful that it constitutes a disabling environment for skills acquisition”… (p. 2). He encourages TVET systems to provide supportive environments so as learners can make use of the skills that they develop. He further stated that the productive utilisation of any form of training in the work place depends upon there being opportunities that enable their utilisation. This is an aspect that is reiterated in literature and UNESCO TVET policy.

Eighteen percent (15) of TVET Lecturers have also expressed this concern. There were those who felt that:

- Field/practical attachment has to be given a certain percentage... (L23).
- More practicals and work experience in terms of attachment should be availed to students (L63).
- Learners may be required to do some projects and be equally assessed on practical work (L67).
- Students must be assessed on real industry situations (L77).
- Practicals need to be strengthened (L70).

Others called for a prolonged period for TVET Learners’ attachment. For example:

- Prolonged attachment for Learners, e.g. 6 months instead for 4 or 6 weeks (L29).
- More practicals (L71).

The respondents indicated strong beliefs that providing opportunities for skills utilisation for TVET Learners could support local economic development. With many unemployed TVET graduates, such initiatives could equip them with employable skills which could be used as a form of employment creation. Botswana Training Authority (BOTA) in 2010
has reported the unemployment rate between the 15 – 24 year old age demographic at 72% for 2005/2006 from which 50% are TVET graduates.

5.4.5: Research and resources

Emphasis on the availability of resources (both human and material) is deemed important in any training system (Darussalam, 2010; Kirkpatrick & Kirkpatrick, 2009; Morgan, 2008). The use of ICT is one of the more important enabling resources. One TVET Lecturer felt that TVET Learners should:

Research from internet, i.e. google (L53).

Others were more concerned about general resources and stated that:

Adequate resources should be provided for both the learning and the delivery of the course (L61).

More books at the library and good classroom for Learners to learn in (L67).

Another called for:

Guest lecturers as well as industry visits (L49).

The literature acknowledges that TVET programs must encourage Learners to be independent and competitive, and to use technology in the classroom and expose them to technology in the workplace (Gagnon, 2009; NICHE, 2010) and enable/encourage problem-solving skills, decision making skills, and teamwork to better prepare them for high performance in places of work.

5.5: Summary of responses to section six of TVET Lecturers’ survey

Section 6 of the TVET Lecturers’ survey sought TVET Lecturers’ perceptions of the overall work (study) term. Open free responses were from five questions (31, 35, 36, and 39) from this section. Responses to each question are discussed below:
5.5.1: Enrolments in TVET courses in Botswana

Question 31 sought any form of information regarding the TVET courses that participants felt had not been previously addressed anywhere in the survey. Comments touched on issues of the curriculum, progression pathways between programs, resources, non-recognition of BTEP by the government and employers, grading system, instruction/delivery, assessments and industrial attachment for Learners.

5.5.1.1: TVET curriculum

Enrolment in Botswana TVET institutions is after 10 or 12 years of basic education. Those who opt to enrol after 10 years have completed JC (Junior Certificate) and those who enrol after 12 years have completed BGCSE (Botswana General Certificate of Secondary Education). The Botswana government has increased access to TVET between Junior Certificate (JC) and BGCSE holders (candidates who have completed senior secondary education). This attempt would dictate re-structuring of TVET curriculum as it was designed for standard sevens (those who have completed 7 years of primary schooling), those who could not proceed to secondary education. This has been emphasised by some TVET Lecturers who felt that the current curriculum is below the standards. One TVET Lecturer indicated that:

*It does not give Learners a wide scope to grasp in-depth knowledge (L6).*

Another was more specific:

*Generally, I feel the whole curriculum needs to be re-structured to cater for the current enrolment. It was meant for Standard 7s but currently people who are enrolling are JC & Cambridge/BGSCE holders (L23).*

One strongly suggested that:

*The course needs to be revised. It has long been overdue. It should be done soon (L82).*

In summary, TVET Lecturer concerns match RNPE (1994) and NPVET (1997) recommendations, through which the country is attempting to make TVET more attractive and relevant to its intended clientele. Interestingly, contrary to employer data surveyed, lecturers expressed concerns about the relevancy and appropriateness of the
BTEP suite of vocational courses to labour market demands in Botswana. One TVET Lecturer felt that:

*The employers tend to question BTEP qualification (feedback from students) (L48).*

Another issue regarding the overall TVET curriculum in Botswana is that of progression pathways. This is not addressed in government reports and often those at end users (TVET Learners) find it difficult to progress between TVET Levels 1 & 2 and even beyond to TVET Level 3 (university degrees). One TVET Lecturer called for clarity regarding:

*Progression pathways between levels (L42).*

Another aspect of training is that of a training model (a form of course outline for learners) to guide facilitation for all TVET courses. Although it is not clear as to whether reference was made to BTEP or apprenticeship courses, one TVET Lecturer complained that there are:

*No training models (L38).*

And one questioned:

*Mode of delivery to Learners (L57).*

### 5.5.3: Resources

The issue of resources was prominent in responses. TVET Learners mentioned the issue in their responses (see section 5.1.1.1). It is worth mentioning that only one TVET Lecturer, similar to section 5.4.5, touched on physical learning resources and felt the:

*Need to have more training equipment or modern technology to improve the learning process (L32).*

### 5.5.4: Assessment practices

Although the issue of assessment practices was covered in detail earlier, TVET Lecturers suggested what might work well with the current TVET framework especially in technical colleges and brigades. Varying opinions are expressed. Some feel:

*Assessment methods are not adequate enough to produce competent students (L62).*
Others are suggesting that:

*BTEP assessment should be re-visited (L59).*

... instead of introducing the tests/exams etc to the Diploma program, a tool to gauge a portfolio can be designed and employed so that by the end of the day we can have best students (L75).

In summary, the RNPE and NPVET envisaged a competent workforce emanating from the TVET system. In their quest, by improving the country’s TVET system, it is important that on-going evaluation is carried out to identify those areas that need attention as well as improvement of others. Attention could be directed towards student outcomes, competency based assessment to assess learners’ competency on skills acquisition and utilisation. This could at the end be used to aggregate some ideas of the effectiveness of TVET system in Botswana with other factors to consider also.

### 5.5.5: TVET Lecturer perceptions of employer satisfaction with TVET graduates

TVET Lecturers’ perceptions were sought regarding employers’ views on the quality of TVET graduates from Botswana TVET institutions. Two themes were apparent. These were the practical component within the courses, and the need for program review. Those (16%) who indicated that employers were not satisfied with the skills acquired by TVET graduates have strongly called for tightening of the practical components of training.

*At foundation level, Learners are not exposed much to practical aspects of the course and as such, they do not meet the requirements of the companies. Some students enrol for courses they do not like CD&T just to pass time because they do not want to stay home (L1).*

*Candidates need more hands-on training than theory (L5).*

*Employers are concerned about the delivery as regards to practicals or hand on knowledge/skills on the part of the graduates (L26).*

*Because we don’t have enough training materials, some graduates do not produce good working skills or the understanding (L32).*

Other TVET Lecturers felt that a review of curriculum structure is long overdue. They indicated that sometimes the program review timeframe is up to 5 years. Others expressed concern about the time the program reviewers take before giving feedback.
5.5.6: TVET Lecturer perceptions of employability of TVET graduates

TVET Lecturers were asked whether they would employ TVET graduates if they were employers. 71% (60) indicated that they would, 7% (6) stated they would not, and only one percent (1) were not sure. The remaining 21% (17) did not respond to the question. From those who indicated they would employ TVET graduates, the prominent responses were; for evaluation purposes and exposure to industry practices through industrial attachment. Others felt TVET graduates are competent enough (have acquired the required skills); others expressed that difficulty in knowing the achievement rate because the assessment practices used especially with BTEP, others would employ the graduates and would send them for training to up-skill them.

Quality TVET that responds to the demands of labour markets needs to be designed and delivered by educational institutions in close partnership with prospective employers. This is also vital for equipping the increasing numbers of young people completing school with the skills for entering the world of work. One TVET Lecturer stated they would employ TVET graduates because:

...this will help in evaluating the course and further mark way forward in ensuring that what is offered is what the market wants (L7).

To later turn them into finished products at my own expense and pace (L33).

Yes, but with the hope to further train them with more relevant work experience (L69).

The majority of lecturers from the 70% who would employ TVET graduates from technical colleges, have called for strengthening of hands-on experience for TVET Learners. They called for reduction of theory and expansion of practicals/industrial attachment because this gives the TVET Learners some sort of exposure to the world of work. Here are some of their views:

Yes- they cover much content of the course though their understanding is lower but the more they are exposed today to day duties they are able to get it right (L58).

Yes as long as practicals are more emphasised over theory (L5).
Yes but only those who went on work attachments (L4).

Yes. Our graduates are, as is the case with other disciplines, not fully prepared for the tough world of work/environment but to some extent they do fit in. Exposure whilst training is what is lacking and appears to be an eye sore (L26).

Other TVET Lecturers were positive and applauded the system for carrying out the DTVET (Department of Technical and Vocational Education and Training) mission statement effectively. Their views on graduate employability are:

Yes- because they have required skills to perform their duties efficiently (L12).

Yes- because they complete with required professional skills, which suit the industry (L20).

Yes because they are equipped with relevant skills that would give them the best results they need. They are hands-on rather than other graduates from other institutions who are more theoretical (L25).

Yes-Our Learners are of high quality like as our mission statement states (L27).

Yes, because they have at least background of what has been happening and their experience will be of more importance (L31).

Yes, because they are well equipped, as they engage in practicals throughout during the period of their studies plus attachments (L34).

I feel that they are well trained to face the challenges (L46).

Absolutely yes; they are practically trained both in their workshops and in industry as a result, by the time they graduate, they will be theoretically informed and educated and practically competent to carry out the work in industry (L61).

Yes, Graduates who are hands on always produce good results. This is evidenced by feedback from the employers when they are on attachments (L66).

Other TVET Lecturers were not satisfied with the quality of graduates. One TVET Lecturer stated that they would employ:

Only NCC not BTEP graduates (L2).
Others wouldn’t employ TVET graduates:

...because of [BTEP] elements are graded based on their competencies, if you need the best student, it is/will be difficult to select one (L47).

...technical colleges are supposed to provide more practical work than theory, which is not the case with our current system (57).
...because these students are not in position to adhere to work ethics. No respect for deadlines, not easy to take instructions, difficult to cope with them (L80).

...if they were just employed on the basis looking at their vocation only, then I would. But with the key skills, I would not. Graduates take key-skills for granted (L82).

...not at the level of the lecturer but only as laboratory/workshop assistants (L83).

Analysis of the responses concerning TVET Lecturers’ perceptions of employability of TVET graduates has provided valuable information which could be used to direct future improvements of the system (especially for TVET levels 1 and 2 programs). Some TVET Lecturers’ concerns about the quality of TVET graduates, especially BTEP graduates, cannot be ignored.

Comments were made about the period it takes for TVET graduates to find employment. Concerning the absorption into the industry upon graduating from TVET institutions, the majority of responses indicated that it sometimes takes between 2 and 10 years before employment. Hence, some graduates opt for further studies in other vocational areas or for employment that are completely different from what they have been trained to do.

29% of respondents felt that:

It may take up to 3 years (L21).

Long enough. In some instances, they end up doing/opting for jobs completely unrelated to their training as dictated by the job market (L26).

Up to 10 years, or until they even change their career (L18).

They wait for long (years) because the market is already saturated (58).

Other TVET Lecturers (6%) felt that:
They rarely get employed, but this depends on the courses. Some end up even changing fields (L23).

Not so sure, there is no tool in place to track their whereabouts after completing their studies (L66).

On this point, it is relative to the availability of work opportunities (L78).

Other comments were:

The majority opt to go on further training than going to work (L8).

Most of the time they further their studies...(L12).

Other lecturers were positive and stated:

Some get jobs immediately, especially those who did well during attachments. Other take a long time (L1).

It depends, at times immediately (L50).

Some get hired immediately after completion, some wait for a period of not more than six months depending on their vocational areas (L74).

At this stage DTVET (Department of Technical and Vocational Education and Training) does not publish TVET graduate employment rates and post-graduation times to employment. However, anecdotal evidence suggests that on average, a Motswana TVET graduate has to wait six months for employment in their chosen field.

5.6: Summary of open responses to section seven of TVET Lecturers’ survey

Section seven of the TVET Lecturers’ survey sought perceptions in regards to their experience and job satisfaction. They were asked how often they engage in staff development activities (workshops, seminars and professional development courses). More than 90% have indicated participation in some form of training in their respective TVET institutions. Some engage in such activities when employers (Ministry of Education and Skills Development, MoE & SD) feel there is a need.
There were those who felt this issue has been neglected by in their institutions. Their comments included:

...training not provided for lecturers at all. Staff development is neglected in my institution (L33).

...staff development activities are hardly offered in our institution (in relation to our area of speciality (L58).

Short courses are never done; long term-takes a long time to be done and it’s for the college not the department (L65).

...they are not engaging; seminars, short/long term are not forthcoming (L74).

Grollmann (2009) stated that institutions should be enabling environments where communities of practice are developed. Communities of Practice (CoPs) are referred to as groups of people who share the same interest in something that they know how to do and who interact regularly to share personal and professional experiences on how to do it better. As Hoadley (2012) and University-Of-Southern-Queensland (University-Of-Southern-Queensland, 2015) state, communities of practice provide an opportunity to create a learning community around an area of interest, to share and develop practice and build personal and professional knowledge and expertise. This moulds the quality of a profession. Grollman suggests this is one of the factors that increase TVET Lecturer morale in work based settings.

Additional comments were sought from TVET Lecturers about any issues that might have been elicited in the survey. Similar concerns previously discussed included resources, up-skilling of TVET Lecturers, proper structures within the system, curriculum reviews and assessment issues.

In summary of the TVET Lecturers’ responses, the survey responses revealed that the same concerns and suggestions of TVET Learners were also expressed by TVET Lecturers. These include increasing practical assessments to ensure that students acquire relevant industry skills. There was also a call to provide opportunities for industrial attachment for at least several months before end of the course. TVET Lecturers also emphasised the need for the possibility of incorporating continuous assessment as input to final grades.
5.7: Employers’ responses to open ended questions

Detailed background information about this stakeholder group and the survey used was discussed in section 4.2. There were only two open-ended questions. One elicited suggestions on how TVET in Botswana can be improved; the other one sought any comments regarding current TVET practices in Botswana.

Regarding suggestions as to how TVET in Botswana can be improved, two themes emerged. One was about the structure of TVET programs and the other was on the professional development of lecturers. One employer expressed that:

*The government should invest in the human resource running technical colleges. There is a lot of compromise where most of the lecturing staff are not suitably qualified (Ex).*

Most of the employers were more concerned about the overall structure of the TVET programs as they felt there is too much theory at the expense of practical training. This is considered a hindrance on the part of TVET graduates at workplaces and is proven to be costly for employers as they need to send employees for further training. Strong suggestions with regards to practicals in class and during industrial attachment from the hospitality and tourism sector are that:

*As this job is practical trainees should spend most of the time doing practicals than theory (Hospitality, Ex3Mar)*

*I think you should provide them with more time on practicals during training (Ex4And).*

*The students should be taught proper time management skills and edged to have more confidence and ability to work under pressure. Most of them tend to get more relaxed at work (Ex5kha).*

One employer touched on program review and stated that:

*Another improvement is needed on the practical syllabi. Technical education is very dynamic and therefore constant review is necessary...which is not happening in Botswana technical colleges (Ex6Mup).*

Another employer suggested that structuring of the courses could benefit both the TVET graduates and the employment sector. They indicated that:
While I agree with most of the programs being offered at TVET colleges, I think there needs to be a bit of a revamp of the course material for each specific program to align them with industry requirements. This would ultimately eliminate the need to send graduates for further training once they are in the industry. Sending graduates for further training requires funds and most organisations are not willing to direct their resources onto that (Ex2).

Some employers felt the system did not adequately market the skills acquired by TVET graduates during training. They suggested internship programs for graduates while waiting for employment. Another comment drew attention to the importance of consultation and stakeholder involvement in TVET practices especially in government funded TVET. Employers indicated that:

There need to be synergy between vocational training graduates and the degree graduates at MoE Internship department. The internship program is unstructured but better publicised and reasonably good source of talent/skills. I would suggest that DTVET include VT graduates into that list especially if they come out of government vocational institutes (ExIT-IQ).

There should be consideration to come up with an internship program for vocational training graduates. TVET colleges should communicate with, engage parastatals, private companies etc. to see how best this can be achieved. This would help in up skilling these graduates (Ex-GAlvM).

In summary, the employers surveyed have stressed strengthening the practical component of training. Another point raised was that of synergy between and within government departments especially those within the Ministry of Education and Skills Development (MoE & SD) where some employers felt DTVET is working in isolation from the internship scheme program under the MoE & SD. The internship scheme is based on a data base consisting of list of names of graduates who are still awaiting employment. These listed graduates are hired upon availability of job vacancies.

5.8: Analysis of interview data for government officials

5.8.1: Introduction

Interviews with five senior government officials within the Ministry of Education and Skills Development and the Ministry of Labour and Home Affairs were conducted to
establish their perceptions towards the overall TVET system in Botswana since the recommendations of the two policy documents (RNPE and NPVET) that informed TVET developments in Botswana. Their responses were recorded and indicated varying perceptions towards the TVET system. Six themes emerged:

1) implementation of the TVET policy;
2) stakeholder involvement and consensus reaching;
3) stakeholder satisfaction;
4) student attachment;
5) program review and recognition;
6) staff development and motivation.

Unsurprisingly, the interviewees were generally positive about government efforts in the TVET system.

5.8.2: Implementation of the TVET policy

All senior government officials commended the government for coming up with sound policies to guide the overall education system in Botswana. They applauded noticeable efforts in developing the overall TVET system since the inception of the NPVET and some of the recommendations from RNPE. Their views are represented below:

...we are faring well as a country. We are doing very well in terms of developing policies. Botswana as a country we develop very sound system, some policies regarding education in general but also in terms of sectors that falls under education. I think there are policies that are there...(Off4)

...I want to say that recently the ministry decided that they want to have a relook at the education system in this country and specifically the TVET sector because you may be aware that obviously there is an upsurge in terms of unemployment especially youth unemployment. There has been an upsurge in terms of performance results at all levels, at primary, secondary and tertiary but government have generally said perhaps this addition of skills development to ministry of education means that government now wants to focus on developing skills amongst young population so that they become market employable and hence the move to want to transform the education system in the country particularly the TVET sector. I want to say that well there may have not been an impact by now because this review just started about two years ago the move to want to review the TVET sector...(Off2)
I believe as a country we had a lot of strides, a lot of effort has been put in trying to get the country on track as far as TVET and skills development is concerned. All the NPVET & policies in place have been addressed one way or the other and I’m saying this particularly because now we are at the point where the BNQF is about to be implemented (Off3)

I would say system has fared rather very well to begin with even though in certain area there is still room for improvement (Off1)

They specifically pointed to the highlights within the policy documents that are critical to the Botswana TVET system. They explicitly made reference to the TVET framework, and equity and access in TVET. They further expressed that:

...my belief is that every country needs some kind of framework for things to function properly. In the absence of a framework, things would be the way they have been in this country where we don’t even recognise our own TVET system. The system has been marginalised so that particularly because there was nothing people could refer to as where to put our graduates after training and at what level our graduates could enter the main stream system like universities and so on...so really it’s a milestone and I’m looking forward to that eventuality...(Off3)

The focus of the government mainly has been on access and equity. And along those lines, the government has done very well, several institutions have been expanded, new ones have been built and with the current take-over of the brigades now we have a lot of training places. There is a pilot project at GTC on students with special needs, so you can even see on issues of equity there is something that is being done so I believe that’s the positive...(Off1).

Officials cited completed and on-going government initiated projects that were intended to modernise TVET. One official outlined where TVET was before Botswana’s independence up to the present, and pointed out that some countries have even shown interest in what Botswana is doing with its TVET system. It was stated:

...we have done quite well in certain aspects, as in getting the infrastructure. Like we have 8 technical colleges from the time where we didn’t have anything, we had a few brigades... So really we’ve done really well in that regards and a lot as a country, we have colleagues coming into the country, some countries even as far as Yemen have come here to benchmark, so that means we are doing something well, just that we are not recognising ourselves. Anyway it’s good to criticise ourselves, you know and I believe somehow we are doing it right. But we have a long way to go (Off3).
Although there are noticeable efforts by the government to revitalise the overall TVET system, concerns were noted and some of the senior government officials were critical about implementing some of the recommendations from the policy documents. They felt:

...It takes a long time to implement some of these policies that are put in place and as a result, they have an impact in terms of delivery of programs in institutions and also for the economy...(Off4).

Another highlighted how proper implementation of some of the recommendations could see increased enrolments in TVET institutions and even have programs offered at high levels:

...if things are properly implemented...the centres can absorb a lot of candidates. Some of the tech colleges can even offer programs up to diploma...(Off3).

On the other hand, government officials highlighted the need to re-structure TVET programs to align them with industry requirements thus maintaining quality provision. They felt:

..the only thing that I might say we need improvement on is now the skills that the students are acquiring to be at par with what the industry is looking for. There is not a lot of disparity just that we need to ‘up’ a bit the level of skills a little... it appears the industry is not very happy with the skills that our students have, as they leave the institutions, (Off1).

...we are yet to see one consolidated revised policy that would incorporate the technical sector and also programs that are meant to implement the revised policy but also by extension programs that are industry level...(Off2)

Generally, senior government officials’ perceptions towards the overall TVET system in Botswana are positive. They have praised the government where it has done well and pointed out some areas that need urgent attention. Their highlights include increasing access to TVET by building more TVET institutions, introduction of new TVET programs, addressing issues of social equity and the formulation of a TVET framework. They acknowledge that there is still room for improvement in the overall TVET system. Areas needing improvement include reducing the time taken to implement some
recommendations from the policy documents and designing TVET programs that will enhance the level of skills TVET Learners take to their industry.

5.8.3: The importance of stakeholder involvement

There was an overwhelming response that senior government officials support stakeholder involvement at every level in the Botswana TVET system. Stakeholder involvement includes involving consultations about recent government efforts in the system and reaching consensus and seeking partnerships especially with industry groups and marketing TVET programs to the public.

With respect to consultation and reaching consensus with stakeholders, there is support for engagement starting with research that is conducted in partnership with industry to inform curriculum development and course design. As to what efforts are put into this initiative, one official stated:

_There are structures in place that are called the thematic work improvement teams that are continuously planning. Our government NDP 10 is actually the origin of this thematic working groups that are meant to ensure that this involvement of the private sector, of NGOs, of the committees is an ongoing phenomena so that whatever programs we come up with as Ministries have got an input by industry because whether we like it or not our products ultimately don’t end up with us they end up with industry and we therefore want this to be continuous. This is not just once off arrangement, is something that continues. There are also committees where individual sectors are directly involved (Off2)._

Another pointed out that before any new programs are designed, planned tours are conducted around the country visiting related industry groups and TVET institutions:

_...we do research, we just check the directory and tour the country we visit every institution that has hospitality...we develop surveys and we will have one for the industry, institution, Learners; those that still training and those that are now working. Now if it’s a program that is not yet in place, we just go around the industry and would be able to identify people because of the interest one who direct into the survey (Off3)._

The outcome of such an exercise would often result in round trips before the implementation of the feedback and responses received. For example:
We engage them at different levels; firstly I would say we have different programs running in our institutions. One of them is BTEP, Botswana Technical Education Programs. These ones, for the programs to be developed, the industry has to be involved at every stage, so industry involvement is important and they have organized what is called curriculum development groups. So through these groups they will meet the program development officer, discuss the issues and look at what is supposed to be put into the program or removed and once that is done because there are fewer members that are involved at that level, it is circulated now to a wider group of the same background, same profession. They will look at it and improve on it. So by the time it is being presented now in our institutions, it really had a wide coverage of all the stakeholders (Off1).

We have a quarter meetings where we look our training programs, if they are new initiatives coming from the industry or new technology, they come and advise to say....you need to change your syllabus/curriculum/learning guides because this is what is now coming in the industry. And from there we now have sub committees or task teams that we specifically set up to go to South Africa see how they do things there in terms of training delivery and then we develop our own learning guides so that we ensure that we meet the standards. Develop the standards and make sure that we teach according to the standards that are developed by the industry. So there is a closer linkage with the industry...(Off4).

Several officials also mentioned that they sometimes have employers in institutions as guest lecturers. These employers also take TVET Learners for industrial attachment and some employers even opt to sponsor some of them. They stated:

There are also committees where individual sectors are directly involved; I could give you an example when I was still at TVET we used to have what they call ‘taking TVET to the people’ where we would invite industry. They would come and we would give them slots to talk to our students. Our committee members would indicate how they see our role to be in the improvement of TVET sector and they would in fact make commitment beyond just indicate what their role is. They in fact make commitment of how they are going to even sponsor some student...

...I remember when we were in Maun, in Maun Technical College, companies were actually presenting and saying they would to see students during their practicals not using the old fashioned machinery that is seen in the Institution but actually being sent to industry where they can actually use live equipment. And we thought this was impressive because the industry is saying that we want people who will graduate with current knowledge so that when they come into the industry we don’t start training them again, they come and they have been exposed to what is current in the industry...(Off2).
On the other hand, some officials were not so positive with the current level of stakeholder engagement with government TVET, especially relating to that of industry groups/employers. They felt there is minimal consultation from the government with a negative impact on quality and training relevance. One official pointed out that this culture is very common in government TVET institutions especially the technical colleges and foresees that crossing over to the brigades since the government ‘brigade take over project’ is under way. He stated that:

...The institutions work in isolation, they don’t consult. When they consult is when they send a document to industry to say, this is what we have done, we want your input...and it should not work like that. The industry feels if you want them to participate, there must be rapport between institutions and the industry. Time and again, visit them, talk to them tell them your thinking and be very open, let them tell you and criticise you...

... so there is that linkage with the industry/employers which is missing with the technical colleges. They should go to the workshops, establish things and make certain decisions, they are forgetting that their output from the colleges go to employers who are the industry. Now that linkage must start immediately from conceptualisation of the concept of a project as what you want to do to. This is where they have to bring in the industry so that they can have an input. You don’t have to have a small committee not involving everyone, as you go, you keep bringing them in by involving them from the beginning. But if you have started the journey already, and half way the journey and you call them to join you on board, they are going to resist. And they will say they don’t know anything about that, so I think that missing link is what I call a mismatch in terms of training because the institutions are training and they are not involving the industry/employers. That’s a mismatch in terms of TVET under MoE & SD...(Off4).

In summary, there are various views and perceptions about stakeholder engagement in Botswana TVET. The majority however felt the Government was doing everything that needs doing to engage and collaborate with industry groups and employers for the effective running of TVET in Botswana. This is from conducting skills needs surveys to curriculum design, program development and implementation.
5.8.4: Stakeholders’ satisfaction with the current TVET practices

Senior government officials have differing views of stakeholder perceptions of Botswana TVET practices, especially the views of employers. One official suggested that the expansion of ‘Ministry of Education’ to include ‘Skills Development’ is sufficient evidence that the government is concerned about skills development in the country especially that of youth. He further stated that a review was carried out two years ago particularly for the TVET sector and that:

...This came about when the industry began to say wait a minute, your products are not up to scratch and therefore we are not able to employ them...(Off2).

He added that the review is yet to be implemented and the revised policy be devised and implemented. Another pointed out that:

...it appears the industry is not very happy with the skills that our students have, as they leave the institutions...(Off1).

One official touched on views expressed by other stakeholder groups, (TVET Learners, parents) and alluded concerns especially with training programs (especially the BTEP) and their assessment practices:

...some students feel the level is too low for them...the material is not the good stuff they would have loved it to be and when it comes to parents, their problems with the BTEP is that, they don’t have like...summative assessments where they are taking examinations at the end and then it is graded. This is continuous assessment and there is no pass, no fail. All that we have is achieved. Its either you have achieved the skills that you were supposed to acquire at that level or not. Now the problem is, industry comes back and says, if suppose you have 10 students and we want one, how we are going to get that best student if all of them have achieved. Even parents are saying the same thing. They want to see how our students are faring. We want to know whether they are getting, B....A....whatever it is because they can just go there and play as long as they achieve. That’s it. Somebody who get little marks and may be somebody gets higher marks, they both achieve, it’s not giving us a picture as to how our students are faring...(Off1).

Another concern was that of TVET planning and administration. As mentioned previously in Chapter 2, the responsibility for TVET in Botswana is shared between the
Ministry of Education & Skills Development (MoE & SD) and Ministry of Labour & Home Affairs (MoLHA). The new BTEP are facilitated by MoE & SD whereas the apprenticeship programs are under the auspices of MoLHA. This fragmentation is problematic:

...from policy point of view that, you have MoE & SD responsible for TVET, MoLHA also responsible for technical training. Now if you have a system like that, you are bound to have fragmentation and there is also bound for people saying...I don’t belong to you so I listen to what my ministry tells me. That fragmentation is there, take for e.g. Madirelo Training & Testing Centre (MTTC) and DTVET especially on the apprenticeship, they are blaming one another...

... Technical colleges blame MTTC and in return they blame technical colleges saying that they are not training people properly and that is why sometimes we have a high failure rate in VOC training because there is no proper training. If these 2 could under one ministry with different division that is coordinating and monitoring assessment, and then we have training institutions who are independent from those conducting assessment because we cannot have a referee and a player at the same time. So you know if that was under one ministry, it would be properly coordinated...

... So there is fragmentation in terms of policy implementation and how things are done because of this division... (Off4).

The official further questions:

...Why do we have this BTEP and Apprenticeship, why can’t we have one system consolidating all these and ensuring that there is quality? Now if we have these 2 systems, there is still fragmentation and we don’t even have the capacity...(Off4).

Much of these concerns were critically examined in NPVET and RNPE and resulted in the recommendation of the establishment of Botswana Training Authority (BOTA) which was to coordinate, monitor and implement all TVET practices in Botswana.

... institutions like BOTA were established to stop this fragmentation, but it's not happening because BOTA cannot do this work alone...

... So we are going in circles. There is fragmentation we put in the system to say, 'hey. BOTA you are coordinating vocational training such that we want quality so that 'x' institutions should not do things themselves there in isolation and another institutions do something that is different. And that is why again in Botswana, we have systems in terms of training. By the way we have BTEP, government institutions are using training up to BTEP level, we have apprenticeship, we are not really supposed to be having these 2 systems running parallel to one another. We should have a national
system because looking at the capacity, we don’t have the capacity. (Off4).

On a positive note, one official said:

...I think what is critical is to bring in ideas from various sectors or various environments and say what kind of model as a country would you like to come up with and this is where the issue of rationalization of the TVET institutions as well as the programs...

... You may be having ten (10) institutions offering the same programs that will not work for us in terms of the cost and waste of resources so let’s begin to rationalize the programs and have specialized institutions for example, so that you don’t duplicate the same program across all the institutions. So that rationalization process is ongoing as I speak and as far as I know to try and to say do we need all this institutions, if we do what programs should they be offering, and perhaps focus on upgrading the status of this programs ... (Off2).

Most of the officials have, however, pointed out and acknowledged the fact that the public:

... know what the government wants to do, and knows what the government is trying to do as far as skills development is concerned...(Off3).

The problem is that:

...we were lacking in terms of aggressively marketing our Learners and convincing industries that there is need for them to take in our Learners at the intent and therefore we left to them and let Learners look for where they want to go for attachments and I think the industry is saying let’s work together so that already they would know what to expect (Off2).

There has been very little public education. That’s why I talk about us going out there and making sure that our programs are known... That’s why I’m saying we didn’t do well advertising our programs, and letting people know what these programs are all about (Off3).

However, some TVET programs were viewed positively:

We are doing very well in hospitality & Tourism; Hairdressing and Beauty Therapy; ICT & Multi Media...(Off3).

Yes there are some programs that the industry says we are producing the quality of the products that they are looking for. E.g. in IT, they are so happy with IT and they are saying it’s good (Off1).
With these deficits, there were views expressed as to where the officials want to see the system going. An example:

...the only thing that I might say we need improvement on is now the skills that the students are acquiring to be at par with what the industry is looking for. There is not a lot of disparity just that we need to ‘up’ a bit the level of skills a little (Off1).

Another aspect mentioned was that of economic diversification in Botswana to absorb TVET graduates either as interns or in full/part time employment. They said:

*In Botswana it is very difficult if at all the economy does not diversify to create jobs. Basically it’s one dimension. It is all about diamonds, now what is the national population of Botswana, how many people can be employed in the diamond industry. If Botswana does not diversify its economy, there will always be problems of people saying training is irrelevant when really it is not irrelevant. In every country those types of skills are needed, but the thing is, the market is not there, so deliberately, the market has to be created. There must be an initiative to deliberately create a need for these other professions, but if we only concentrate on diamonds, if the diamond industry need only 20 000 people and they have the numbers, where will the rest go?*

...But having said that, I also...understand /acknowledge the fact that we live in the global world and what we need is portable qualifications, e.g if Botswana does not produce cars for exports why can’t it produce human resource of high quality/calibre and export? So much as I’m saying we need to create a diversified economy, but like I said, we can up the skills like I said before, the skill of training in our institutions, then we will find the neighbouring countries getting Batswana and employ them because of the skills they have. So we are not going to close the institutions because the economy is not absorbing the products. We need to start looking now globally. If you look at Botswana currently, the construction industry, you will find that it is really flooded by foreigners. Different nationalities are working the construction industry...why... now...if we have created that need and they are gravitating towards Botswana why can’t we train people in our institutions that would go to the neighbouring countries and work? So that’s how I look at the whole thing...(Off1).

However, one official advised:

...we are working on developing our expertise in all sectors of the economy. Obviously there shall for a long time be dependency on developed industry because at the moment our industry is a very small developing one and we continue to depend on developed industry so that we can also develop our own industry and expertise. So it’s true we still depend on foreign industry...(Off2).
In summary, there is a range of views being expressed. Some recommendations were provided to fix some of the problems experienced within the TVET system. Negative concerns include employers’ perceptions towards the quality of TVET graduates and hence their employability. Concerning TVET Learners, employers felt their courses were below the expected standards and therefore questions the credibility of their training.

The officials also recognised the community concerns about assessment practices in government TVET institutions especially those offering BTEP. They are concerned about the quality of TVET graduates as they cannot distinguish before high and low achievers. They therefore want the previous grading system (awarding of percentages) to be re-introduced.

At policy level, senior government officials have acknowledged that TVET provision in Botswana is fragmented. BTEP is facilitated by Ministry of Education and Skills Development whereas apprenticeship programs are facilitated by Ministry of Labour and Home Affairs and often there is lack of communication between the parties. The Botswana Training Authority accredits BTEP, which report to the Ministry of Education and Skills Development whereas Apprenticeship programs are managed by the Madirelo Testing and Training Centre reporting to the Ministry of Labour and Home Affairs. This leads to a mismatch between training programs and industry demands.

On a positive note, government officials have indicated that several industries are accepting of the quality of TVET (ICT; multimedia; hospitality and tourism; hairdressing and beauty therapy; clothing design and textiles). They have indicated improvement strategies such as effective marketing of the BTEP, and increasing stakeholder involvement in running of TVET affairs in Botswana.

### 5.8.5: Program review and recognition

Officials responsible for policy design, administration and implementation are optimistic and now talking about revitalising Botswana TVET to make it attractive and more demand driven.
The intention is that we know of our human development strategy which is now talking about demand driven education system that is where we are moving. It has been supplier driven its true but now we are moving to demand driven, and this is because at some point it was clear that we have been training without the knowledge of what the economy needs in all areas sometime over flooding the sector. Now the country is saying wait a minute, exactly what do we need as a country and as an economy and when we do that, we begin to shift from supplier driven to demand driven economy. We begin to respond to the needs of the economy (Off2).

...Also Government has now said we want to involve the private sector and NGO’s more in the planning of Government programs; what we now call semantic working groups where the civil society is cut off these working groups. These working groups that are formed across ministry/departments because people are now focusing on themes rather than on business means of education, means of finance...(Off2).

I think the attitude is we are now beginning to say exactly what we want and I think we are beginning to see a very deliberate plan to upgrade the TVET system such that the training should address both the academic, the theory and the practise because we want to have the vocational sector that is strong, but we also want to also move in terms of status grow. We would want to see somebody probably becoming from being an artisan, being a technician and ultimately becoming an engineer. We don’t want to see people crossing into the academic field because there is no progression on this other side or there is no training in the TVET sector. We want to see the TVET sector growing, so the training of staff should recognise that as much as these people need practical the skills, there would also need the theory which would facilitate even issues of research so that they are competent in handling the programs but also competent in handling research which would inform the growth of the sector (Off2).

Those who are charged with policy implementation are saying:

...we are living in a global village now, if we have to train Batswana to gain qualifications that are portable, these qualifications must come from institutions that are recognized worldwide and we can’t run away from being affiliated to these institutions outside Botswana. If we are going to get qualification or a certificate with a Scottish Qualification Authority stamp on it people will look at it as something they can recognize and accept. If we are going to do things on our own, in Botswana somebody would say....what qualification is this? ....where did you get it from?...you know...how do we equate it to what we already have?...those type of questions, so we are not just looking at getting something that is more like indigenous to just Bats, but we are also looking at aligning our qualifications with what is happening elsewhere (Off1).
Equally, there were concerns about current practice especially that of program design and development. The senior government official highlighted that even though they engage consultants to assist with program design, development and review:

...It might be true that we are just accepting things as they are brought to us, but we were supposed to have been much wiser there so that when these people come..., we had looked at what our needs are, plan properly and say, this is where we are now and this is where we want to be in the next 5 years and this is the vehicle that would take us to that point. Now when people from outside Botswana come with new ideas, we need now to start looking at those ideas in comparison to what we already have and start asking how the ideas fit into what we already have. If they are incompatible, then we don’t have to accept them, but if we know they are going to add value to what is there already, we might want to modify them to suit what we already have...(Off1)

And with regards to current TVET programs, they said:

... ‘yes’ people might be saying the programs are not taking us to where we want to be but there are so many factors that need to consider, like when we look at the final product, the student, if the student is coming up with the skills that are not relevant to the industry, may be it might be wrong to look at the final product, maybe we also need to start looking at our input, you know, are we getting student with proper qualifications to go through the programs or we are getting students who will struggle because academically they are not good...(Off1).

They also touched on issues of program delivery & instructions and resources (human and material):

...secondly, do we have the right equipment to train our students on, are our teachers qualified enough? Do they have the relevant experience? ...you know...you might find out that probably we are getting lecturers from UB...I’m not saying doesn’t train well...but it’s mostly academic so somebody qualifies but they haven’t had a chance yet to go to the industry and work and we pick the because we don’t have lecturers to teach in our colleges. When it comes to theory, this lecturer is going to do well, but when it comes to demonstration the practical skills, that teacher will be found lacking, now we know that, but the problem is, within DTVET not only are we getting lecturers from the market to come and teach, we are also competing with the private sector. If you want lecturer who is in electrical engineering, industry also wants that person now the industry is also looking at the same, so you find our best lecturers are kind of poached by the industry, you know, we are continually recruiting people who are experienced bringing then into the system, training them and then
losing them. That process is just endless so when we start analysing we need to look holistically at all the factors that are affecting the programs... (Off1).

The officials have highlighted that they are now engaged in a revision exercise where existing TVET programs, especially the BTEP, are analysed in an attempt to make them more demand driven. They mentioned:

...one thing is that BTEP was introduced in the year 2000 and from that time up until now, it hasn’t been reviewed... We have sat down and said; look there must be some fire with all this smoke, so we need to do something. So we have hired consultants with the help of African Development Bank. They are going to look holistically at the whole BTEP and then they will give us recommendations. This is supposed to be done in the next 12 months. So we are just awaiting those recommendations (Off1).

We have just had a re-validation drive and this time around we were in partnership with Botswana Tourism Organisation...And in our re-validation, we noted that an injustice has been happening. Our foundation candidates have been exiting after training and yet foundation is just a bridging course. They have to start at foundation because it’s made for people who exited school at form 3 and some of them, and for those who have been in the industry but have no quals. So we want to stick to that. People come to foundation and graduate to cert level and we hope they won’t even exit from there; they will go up to Diploma level because we now diplomas..., so that they are able to go to other institutions of higher learning to advance themselves (Off3)...

... Now with the qual framework coming in, the progression is very clear, we now very well what would have after every level to progress into the Uni even the Recognition of Prior Learning (RPL),... people in this country would start to be recognised for what they know and register with BOTA and BOTA can accredit them. They can now be assessors and even trainers for those who were not recognised. (Off3).

Another comment was in regard to the two forms of TVET provision in Botswana, the BTEP and apprenticeship programs. One senior government official highlighted that:

..the real thing is these two programs are going to run parallel to each other. There is no program that is going to be phased out. And the only thing that the government is trying to do now is to change the teaching methodologies to approach it like BTEP to competency based education and training. That’s what the government is trying to do, to change it to suit competency based education and training. But otherwise it still remains the same. It will not be phased out (Off1).
Senior government officials acknowledged the fact that TVET alone cannot work in isolation. They discussed that even though Botswana has a small industry base:

...it doesn’t mean training mandate stops, because the basic education still channels the students. These are coming with high hopes and expectations... they come at a point where our local market is already saturated, so yes we have trained and produced for the local market and it is saturated but are we going to stop training? We need to give hope to the young ones, so the best is now the globalization part which comes in, we start looking at what is happening around you (Off1)...

...the economy has to diversify and this is high policy decision to be made because once the economy diversify, there will be need for people in various aspects of the sectors of the economy in Botswana needing people to service them. When that happens we can now train more. There will be the knock on effect, so that is what we have to do, and Botswana cannot afford to put all its eggs in one basket. The market on the diamond is basically not only in Africa it is everywhere...its now times to start diversify the economy (Off1).

In summary senior government officials have articulated the TVET strategic direction. This includes improvement strategies like engaging industry to a greater extent, in an effort to provide a more strongly market led TVET. There was commitment to providing Batswana with TVET qualifications that are portable and can be recognised worldwide.

The next chapter discusses the findings of the research, with an emphasis on the positive and negative aspects of the perception and effectiveness of the Botswana TVET system.
Chapter 6: Discussion

6.1: Introduction

This chapter provides a comprehensive discussion of the research results reported in chapters 4 and 5. Its purpose is to address the key research questions by summarising the findings collected from different TVET stakeholder groups that participated in this study. With the quantitative and qualitative analysis reported in detail, the perceptions of the effectiveness of Botswana’s TVET system were examined. This was guided by data from TVET Learners, TVET Lecturers, employers’ surveys as well as structured interviews of senior Government officials. To address the key research questions summaries of the findings will be made, before discussion of the findings and additional themes emerging from the study, in the light of the relevant literature.

The most important finding from the study is that all TVET stakeholder groups acknowledged that there were problems with the current TVET system in Botswana. These problems emanated from the present national TVET policy framework. Poor implementation of some of the recommendations from RNPE and NPVET resulted in poor TVET practices. The most commonly discussed issues were the execution of the policy recommendations which informed TVET planning including TVET program design, development and delivery, the level of stakeholder involvement and reaching consensus.

With the current two TVET provisions in Botswana (Technical Colleges and Brigades), BTEP Learners in Technical Colleges were more satisfied with the current practices in their TVET institutions than TVET Learners in Brigades who have enrolled in apprenticeship programs. Statistically significant differences in satisfaction were noted between groups in the overall TVET provision in areas of the program content and resources; instructional methods; graduation requirements; work term and overall program satisfaction.

The study findings clearly indicate a fragmented system where TVET Learners in Brigades feel they were disadvantaged compared to their counterparts in Technical Colleges. This was so in that more resources were diverted to the Botswana Technical Education Programs (BTEP) since their introduction a decade ago. Botswana, as part of
the global TVET community, was engaged in reviewing its TVET systems after the
country’s independence (1966). Facilities were expanded with the government injecting
more funds into the system. With many TVET systems undergoing review globally, the
Government of Botswana devised new programs (BTEP) in partnership with the Scottish
Qualifications Authority, in an attempt to modernise TVET. This study confirmed what
other studies have established about development in global TVET (King, 2009a, 2009b,
2011a, 2011b; McGrath, 2002; S. McGrath, et al., 2006). Details of TVET developments
globally including in Sub-Saharan Africa, were discussed Chapter 2 (see section 2.3).

The key findings and recommendations focussed on the five research questions as
presented in chapter 3 are discussed below.

6.2 Discussion of key findings in relation to the research
questions

6.2.1. Stakeholder perceptions of current TVET practices
in Botswana

The stakeholders in Botswana TVET were defined in chapters 1 and 3. Significant
differences with regards to TVET provision (Technical Colleges and Brigades) were
noted between groups (chapter 4: Table 4.6). These were in areas of:

1) TVET courses;
2) program content;
3) program resources;
4) program instruction/evaluation methods;
5) graduation requirement/employment requirement;
6) work term and lastly;
7) program adequacy.

Comparison between these areas indicated that TVET Learners felt some areas have been
somewhat satisfactorily addressed compared to others. For example, in the area of
program adequacy (Table 4.5), a higher proportion of TVET Learners were united in
responses and some positivity observed. Differences in opinion were observed in the
other areas.
In the area of program content (section 4.3.2.2), there were differences of opinion between learners’ with strong expressions in the areas of time allocation for the units within the courses, relevance of some learning objectives to actual courses, and balance between theory and practice during training (items 10-14: Appendix B). There was a feeling in Technical Colleges that too much time is spent unnecessarily in some training units (Appendix I). Responses to relevance of course learning objectives also indicated differences in opinion, where TVET Learners in Technical Colleges were more positive in their perception of TVET than those in the Brigades (Appendix I).

Generally with the area of resources (section 4.4), analysis indicated that TVET Learners felt there was some specialised equipment, textbooks and software which could be used to reinforce training but were not available (Table 4.10). This is an indication of insufficiency of training resources for most TVET courses. Teixeira (2014) emphasised commitment by government to restoring the productive structures of training by devoting them to the equipment and development of human resources. With program delivery practices (program instruction/evaluation methods), TVET Learners felt the learning activities were somewhat consistent with industry practices. They were however less positive about the assessment methods.

In Botswana, there are two forms of student assessment currently used in Government TVET institutions. Institutions offering BTEP have adopted competency based assessment (chapter 2: section 2.3.4). In competency based assessment, students are assessed as ‘competent’ or ‘not yet competent’ based on evidence collected by the TVET Lecturer. This would mean TVET Learners would continuously work on those areas of assessment ‘not yet achieved’ within set deadlines to enable competency. For those TVET institutions (Brigades and Technical Colleges) offering apprenticeship courses, the use of old methods of testing and examinations are still the norm where learners either pass or fail written examinations (norm referenced assessment), (section 2.3.3). TVET Learners indicated that the requirements for successful completion of the course were sufficiently communicated to them.

The study also found out that TVET Learners had varying views with regards to the work term (time spent on industrial attachment), (section 4.7). Those TVET Learners in Technical Colleges were more positive about their work term compared to those in Brigades (Appendix I). This was in regards to appropriate placement of the work term.
within their training; clear and sufficient objectives of the work term; adequacy of the
time spent on industrial attachment to reinforce learning and the exposure to real life
situations as well as appropriateness of assessments methods utilised during the work
term.

The study also revealed that learners in urban institutions were more positive about most
aspects of their training than those in rural areas (section 4.9.2). This is not surprising; the
trend in Botswana is that most social and economic developments occur mainly in the
large cities. Most TVET institutions in urban areas have been newly built and developed
compared to those in rural areas, e.g. Gaborone Technical College and Francistown
College of Technical and Vocational Education as state of the art institutions. The same
trend is observed with the newly built Brigades’ facilities after the Government ‘takeover
of Brigades’ project (section 2.3.4) commenced more than 5 years ago. Generally those
TVET Learners’ in urban institutions have the advantage of exposure to modern
technology and facilities being brought about with the new developments compared those
TVET institutions which were built more than four decades ago. With the ‘Brigades
takeover’ project underway, there was hope that some Brigades will be modernised to
facilitate global TVET best practice.

6.2.2 To what extent do the stakeholders perceive the
current TVET practices to be effective?

International observers have detailed some positive developments of the TVET systems
in Botswana and other African states (section 2.2).

Findings from the study indicated that TVET Learners felt that generally the TVET
curriculum has the potential of equipping them with employable skills upon completion
of their training (Table 4.5). They also indicated that program content, instructional
methods, and employment potential have been addressed for improvement, compared to
other areas of their training. They felt more could be done with the resources (lowest
mean compared to other areas mentioned) for effective delivery of programs, however.

Similarly TVET Lecturers also indicated that curriculum content, student employment
requirements and work term have been addressed more satisfactorily compared with
program resources and instructional methods (section 4.12.3). The employers surveyed
also commented on Government TVET practices, especially on programs and graduates
An equal number of respondents indicated that they have employees who have graduated from Government TVET institutions (Table 4.23). The responses received about graduates’ competence on performing tasks at the workplace varied. From the total number of responses, the majority indicated that more work is needed in terms of preparing TVET Learners for the world of work. Employers also indicated that the majority of their employees are TVET graduates from BOTA accredited institutions in Botswana. They stated that these employees are adaptable and trainable.

It is worth noting that students can enrol in Government TVET institutions after 10 or 12 years of general education. When NPVET was introduced in 1997, it was estimated that access to formal TVET was about 10% of all secondary school leavers, (Akoojee, 2005; Republic-of-Botswana, 1994, 1997b). Republic-of-Botswana (2008) reported increased funding for TVET, and an increase in training opportunities and quality as highlighted in the National Development Plan no. 9 (referred to as NDP 9). The Government takeover of the Brigades was a factor in increasing the number of training places. Issues of social equity have also been dealt with in a number of ways (see chapter 5; section 5.8.2).

6.2.3 In what ways do they perceive the system could be made more effective?

Although TVET Learners were positive about most aspects of their training, more can be achieved in terms of the overall improvement of the system in accordance with the recommendations from the Revised National Policy on Education (RNPE) of 1994 and the National Policy on Vocational Education and Training (NPVET) of 1997, (Republic-of-Botswana, 1994, 1997b). TVET Learners have strongly indicated improvements are needed in the areas of training resource, exposure to work based learning, as well as improved TVET assessment systems (section 5.3). Emphasis was also placed on increasing the use of ICT during training, including the use of on-line learning, to better suit the needs of individual students (section 5.3.1).

Findings from this study also indicated that most TVET Lecturers believed more frequent program reviews were necessary (section 5.4.1.1). They indicated that some BTEP programs had not been reviewed since they were introduced in 2000 despite the 5 year shelf life. With the apprenticeship courses, it was indicated that most of them have not been reviewed since 1999. The need for constant reviews of TVET programs was stressed.
in government directives and policies (Republic-of-Botswana, 1977, 1994, 1997b). It was recommended that reviews be carried out at least once in four years. Repetition of content across units was also a concern for TVET Lecturers (section 5.4.1); it was believed that constant review could eliminate this. Lengthy reviews of national training curricula can be problematic, because of the implementation of new technologies, and hence changing skills and knowledge requirements. It is crucial that TVET managers in Botswana take into account the issues of globalisation, internationalisation of TVET and its competitiveness across borders.

Constant revision of TVET curriculum is critical in a knowledge economy. With improvements in the use of ICT and the ever changing world of work, the production of highly-skilled personnel is essential. Boutin, Chinien, Moratis, & van Baalen (2009) discussed the need to consider global trends in TVET development as countries respond to changes in the economic landscape. It is also important that TVET institutions as well as the Government carry out research and identify where improvement is needed in terms of skills development. The points above support recommendations from African-Union (2007) and UNESCO & ILO (2002) about on-going evaluation of programs as a measure of quality assurance. This is an important point to be brought about by the TVET Lecturers in that Botswana’s Vision 2016 advocates for educated Batswana by 2016 who would participate in all sectors of the economy. It is without doubt that the international TVET community (African-Union, 2007; Akoojee, 2005; Boutin, et al., 2009; S. McGrath, et al., 2006) is commending Botswana among other African states for noticeable efforts in reforming their TVET system.

With regards to strengthening the industrial attachment component, findings from the study indicated that TVET Learners desired more time in industry as opposed to the current practice where more time is spent inside the classroom (section 5.3). Other findings were lecturer perceptions of too much external influence by external international consultants in shaping Botswana TVET strategy, a practice which is often linked to mismatch of training to industry requirement. This confirms a study by Akoojee (2005) which criticised the Botswana TVET system with regards to the BTEP indicating that there was too much foreign expertise involvement than the local people who understand their local context better. It is worth noting that the Government, in its attempt to modernise TVET, devised these programs (BTEP) in partnership with the Scottish
Qualifications Authority. Anecdotal evidence indicates that these programs were not relevant to Botswana’s labour market.

UNESCO-UNEVOC (2013) and African-Union (2006) highlighted that, in this era of the knowledge society, where there are constant changes in workplace settings and the use of ICT, provision of relevant TVET programmes is deemed crucial to foster sustainable development and attainment of Millennium Development Goal (MDG) objectives. Quality TVET programs that are responsive to labour market demands need to be designed and delivered by educational institutions and other providers in close partnership with prospective employers.

The current TVET assessment practices are competency based in Technical Colleges and norm referenced in Brigades. Curtis (2010) discussed that these assessment practices (competency and norm referenced assessments) are used for the purposes of promoting learning, measuring individual achievement and evaluating programs and indicated that a number of international organisations have successfully used TVET programs to collect individual learner achievement data in order to evaluate programs and systems. Examples include the International Association for the Evaluation of Educational Achievement (IEA), and Organisation for Economic Co-operation and Development (OECD). As stated, these data provide valuable insight about TVET learner performances across ages and levels, information which could later be used for comparison purposes with other countries and “those countries whose achievement is consistently high become exemplars for others” (p.8). This is an important aspect of training that TVET personnel in Botswana could explore and learn from. The researcher acknowledges Botswana Government attempts to introduce competency based assessment for Botswana Technical Education Programs (BTEP). This mode of assessment was new to Botswana and was only practiced by those Government TVET institutions offering the BTEP. A concern is that most TVET Lecturers were not trained to conduct such assessments and therefore the issues of execution, consistency and quality across the institutions were at question. This is an addition to the international debate about the effectiveness of the use of competency-based training and assessments in TVET (UNESCO-UNEVOC, 2008; UNESCO & ILO, 2012).
6.2.4: How do the interactions between different stakeholder groups influence current TVET practices in Botswana?

Endorsed by the Republic-of-Botswana (1994) apprenticeship remains one of the major routes to skill certification. It was also recommended that a variety of other combinations of institutional training and work experience leading to trade test and skill certification be adopted and actively developed. With such, evaluation in relation to local TVET practices in an attempt to optimize training for improvement of systems was deemed important (Seddon, Fennessy, & Ferguson, 2009; Singh, 2001). Republic-of-Botswana (1994) then recommended that regular employment surveys of their graduates be undertaken to measure the effectiveness of their training.

Although there is evidence that the industry is involved in program design and development, there seems to be mismatch of perceptions and expectation as to how the TVET programs should run. This is evident in that the employers and senior Government officials who participated in this study indicated disparity between the TVET programs and industry requirements. This included the duration of learners’ industrial attachment on the side of the lecturers (section 5.3.2), learners (section 5.4.1.3) and Government officials (section 5.8.2). Employers noted the quality of training offered in TVET institutions was not up to their expectations and therefore called for overall improvement of the training offered (section 5.7.1).

Another finding from this study was the lack of timely program reviews (section 5.4.1.1). It was revealed that many TVET programs have not been reviewed since they were implemented, some more than a decade ago. This, as noted earlier, is not conducive to matching skills with workplace requirements, because of the rapidly changing nature of most workplaces globally. Programs need to be reviewed constantly to keep up the pace.

Feedback like this is very important in any system for effective improvement in practices. It is important that those tasked with planning, developing and implementing policy evaluate their efforts timely so as to identify where improvements are needed and where they can strengthen their efforts. As discussed earlier in chapter 2 (sections 2.7; 2.8; 2.9 and 2.10), it is crucial that stakeholder perceptions on how well the system strategies put
in place by the Government are delivering against the TVET goals be established and acted upon for system’s relative effectiveness.

6.2.5: What impact does the interaction between various modes of TVET delivery in Botswana have on perceptions of relative effectiveness?

Since the launch of the BTEP in early 2000 in Technical Colleges and later in some Brigades, less attention has been directed towards apprenticeship courses. This was so in terms of resource allocation and utilisation (Appendix I). A distinction was also apparent in those institutions in urban and rural areas. The newly built institutions, both Brigades and Technical Colleges had better resources and personnel compared to old ones. With the history of Botswana Brigades dating as far back as 1960’s as community run enterprises (Chapter 2- Development of TVET in Botswana), it wasn’t until 2009 that the Government launched the takeover of these institutions.

With the challenges and concerns noted, it was however not clear as to how the administration of the two forms of TVET provision was going to be addressed. As discussed earlier in the study, the respondents have indicated fragmentation of TVET system in country which was affecting its relative effectiveness (section 5.6; 5.8 and 5.8). With the Ministry of Education and Skills Development administering BTEP in Technical Colleges and some Brigades, and the Ministry of Labour and Home Affairs with responsibility for apprenticeship courses, it was highlighted that there was a lot of tension and competition amongst these institutions where some felt they were doing better training than the other (see chapter 5; section 5.6.1.2). Republic-of-Botswana (1977) has very much warned against this practice and had suggested a unified system to ensure system effectiveness. Other respondents, Senior Government Officials, Employers and TVET Lecturers called for consultation and consensus from various stakeholders as to suggest and develop a training model for the country as well as rationalisation of TVET institutions and programs.

There were critics, however, of both TVET provisions. With BTEP, there is a feeling that there was too much involvement of foreign expertise with the programs, leading to lack of relevance in the Botswana economic and social context. Although there are reports that
the BTEP were devised in collaboration with most stakeholders, findings from this study suggests very little stakeholder involvement from other groups. It also appears that not enough marketing was done to sell these programs to potential employers as well. With the apprenticeship courses, concerns were expressed that they were outdated (as far back as 1999) and little had been done and said about their review. It was, however, highlighted that the Government was in the process of changing the instructional methodologies to approach these programs (apprenticeship) like the BTEP. Competency based training was going to be adopted as stated.

6.3: Summary of chapter 6

As reflected in chapter 2, TVET is seen as one of the most effective human resource development strategies for developing nations. It can be embraced in order to train and modernise their technical workforce for rapid industrialisation and national development (Afeti, 2012; McGrath, 2002). The need to link training to employment (either self or paid) is at the base of all the best practices and strategies observed worldwide. In view of the rapid technological advances taking place in industry and the labour market in general, flexibility, adaptability, and lifelong learning have become essential to TVET (Afeti, 2012; Nam, 2009; Qureshi, 1996). An effective TVET system is defined by having national TVET policy as well as training authorities to monitor the overall TVET provision. In general, the training authorities, through their various specialised organs and advisory councils, have the responsibility to develop national vocational qualification frameworks and proficiency levels as standards for validation of training, certification and accreditation of training institutions (Afeti, 2012; Allais, 2012; King, 2011b; McGrath, 2002). As Afeti states, in order to promote TVET and enhance its status, countries including those in African have to:

1) enhance the quality of training;
2) assure relevance and employability of trainees;
3) improve coherence and management of training provision;
4) promote flexibility of training and lifelong learning and;
5) enhance the status and attractiveness of TVET

In order to achieve this, an increased cooperation between TVET authorities and stakeholders especially the industry and the labour market has to be maintained (Qureshi,
This has become an important factor for upgrading TVET curricula, equipment and facilities, as well as in introducing new programs and cost effective delivery approaches. It is also one of the strategies that assist in designing a TVET curriculum which is aligned to the needs of industry in order to create harmony at the national, regional and global level on a long term basis (King, 2011a, 2011b). Achievement of all these will see an effective TVET system where there is link with schools and higher education sectors with recognition and credit transfer for qualifications, competency based and assessed TVET curricula (Nam, 2009; Qureshi, 1996). It must also cater for social opportunity, access and inclusion (Afeti, 2012; King, 2011b; Qureshi, 1996).

In summary, as far as the two TVET provisions in Botswana are concerned, a number of issues (both strategic and operational) exist in the areas of program content, instructional methodologies, resources and assessment practices. With statistically significant differences noted between groups regarding some aspects of the overall TVET provision in the country, a lot is yet to be achieved in terms of improving its relative effectiveness.

The challenges witnessed about the two TVET provisions included the fragmentation of the TVET system is apparent. The Ministry of Education and Skills Development administer BTEP and Ministry of Labour and Home Affairs with the apprenticeship courses. Confusion in terms of role execution & implementation were not clear. Communication between the two provisions was also another challenge discussed. With one form of training adopting the competency based training with its associated assessments (BTEP) and the other with norm referencing (Apprenticeship courses). Findings were that the majority of participants favoured the old forms of assessments. The level of stakeholder involvement, and the importance of their engagement especially the industry was also a crucial point discussed at length in this study. Improvements within the system since the implementations of policy documents are certainly noticeable. There are however challenges as stated that need to be addressed in order the make the system effective and relevant to Batswana for social and economic development.
Chapter 7: Conclusions and Recommendations

7.1: Introduction

The development of education and training in Botswana has been the Government priority since the country’s independence in 1966. Consistent with the United Nations Declarations, policies that guided the overall provision of education and TVET in the country were developed. These were RNPE in 1994 and NPVET in 1997. These policies sought to:

1) Effectively prepare young Batswana to be responsible citizens;
2) Develop relevant training which is responsive to labour market demands;
3) Provide effective education and training management systems.

This is underlined by the country’s Vision 2016 which envisaged Botswana to be a prosperous nation by 2016. The importance of education and training and the vital role they have to play was emphasised. One of the pillars envisaged Botswana to be “An educated and informed nation” where Batswana will have the opportunities to continue education, with options during and post-secondary level to take up technical and vocational education as an alternative to purely academic study (Republic-of-Botswana, 1997a).

The aim of the TVET education pillar views education and training as a vital source for citizen empowerment in economic and social participation. It envisaged candidates who can participate in the country’s economic growth through enhanced productivity and employment at the end of their training. All the above were to be realised through national development plans (NDPs) in which Botswana plans its social and economic agendas. Education and training were therefore:

1) To be good quality, relevant in producing local and global competitors;
2) To introduce and enhance the use of ICT to equip Learners with the necessary skills and to improve and monitor the development of education and training;
3) Strengthen partnerships with the relevant stakeholders to complement Government efforts in the provision of TVET.
7.2: Summary of conclusions

The contribution that this thesis makes to knowledge can be viewed from both theoretical and practical perspectives. From the theoretical perspective, the study contributes to the ongoing literature emphasising the need to commit to informed public dialogue. Such engagement with important stakeholders would serve as a cornerstone for identifying capabilities, a strategy to appropriately understand education and training needs as a basis for determining priorities and targeting interventions (Montague, 2009; Schwalje, 2011; Tikly, 2013). This could strengthen and extends to sustainable development initiatives thus contributing to the country’s economic advancement (Montague, 2009; Schwalje, 2011).

TVET is central to any transition to a socially, economically and ecologically sustainable society, as it promotes both lifelong and life-wide learning, engaging all spaces of learning: formal, non-formal and informal to adult life (Lotz-Sisitka & Olvitt, 2009; Lotz-Sisitka & Raven, 2009; Singh, 2009). Achievement of this could only be viable through provision of relevant resources including suitably prepared and motivated TVET instructors and trainers, appropriate learning materials, a relevant TVET curriculum and good infrastructure. All these could empower individuals to freely use the opportunities that are presented to them through TVET to convert whatever resources they may have into achievements or outcomes of different kinds (Jacobs & Hawley, 2009; Tikly, 2013). With attention to progression and articulation within Botswana National Vocational Framework, there is need for flexibility between and within programs to create a career-path through qualifications and skills development as envisaged (Nam, 2009; Republic-of-Botswana, 1994, 1997b).

From the practical perspective, the study acknowledges the Government’s efforts in reforming the TVET system. The introduction of outcomes-based and competency-based training system was intended to be a means of achieving transformation in the overall Botswana TVET sector (Akoojee, 2005; Lotz-Sisitka & Raven, 2009). However, the distinction between the two forms of TVET (Technical Colleges and Brigades) remains very noticeable. Lack of resourcing in the Government Brigades is of serious concern and needs urgent attention as it hinders the Government’s efforts in providing effective and efficient TVET to the majority of Batswana.
In view of the Botswana Government agenda to prioritise TVET, the results presented in chapter 5 are cause for concern. Fragmentation of the TVET system, minimal stakeholder involvement, lack of resources for effective delivery of TVET programs, and inadequate instructional methods are some of the factors hindering the system’s relative effectiveness that were identified by the stakeholders contacted during this study. For example, the lack of communication between Ministry of Education & Skills Development and Ministry of Labour and Home Affairs in the running of TVET provisions is perceived as hampering Government efforts to provide effective TVET (chapter 5, section 5.8.3).

The more than 41 brigades currently operating in Botswana have a history of producing quality graduates because of their commitment to enterprise in education but the concerns listed above suggest that this may not continue. The Government needs a firm policy which will comprehensively address such concerns, particularly in light of the recent change in governance for the brigades and this should rest on research and documentation of successful TVET practices globally with caution taking into account advice from experts with particular interests in local social and economic context.

Resources for TVET delivery (especially the machinery and equipment) are found to be date and some non-functional. With some of the brigades infrastructure built more than four decades ago, the Government needs to find mechanisms for revitalisation so as they are in a position to handle modern technology thus complying with the latest workplace requirements and developments. This would include re-training of lecturers and re-defining roles and reviewing the existing outdated syllabi, which date as far back as 1999 for apprenticeship courses. With the Government taking over brigades, fair distribution of resources is very crucial. This is so because those brigades are promoted to technical colleges and therefore, they will need to be able to cope with the new administration and meet the possibly changed expectations of new stakeholders. In the past graduates from the brigades have greater employment opportunities compared to those from technical colleges, because of more workplace relevant training. Presently, there is no evidence to show that that has changed. This trend however, might vary under the new governance arrangement.
In Botswana brigades, norm referenced assessments are still used in assessing learners’ work. Although the study in chapter 5 (section 5.8.5) found that the Government is in the process of up-grading these learner assessments to competency based, it is however still the preferred method of assessment in Government TVET institutions (see sections 5.3.3 and 5.5.2).

The results discussed in chapter 5 (sections 5.3.1 and 5.5.5) suggest that resourcing in both technical colleges and brigades need to be addressed as a matter of urgency. Both TVET Lecturers and Learners seemed less positive above the current resources in their institutions especially concerning the use of ICT equipment. Other findings were that of lecturers’ competency in handling the new student assessment methods. With competency based assessment (criterion referenced) for the BTEP, the findings noted concerns about the competency of TVET Lecturers in handling such assessments (see chapter 5, sections 5.3.3 and 5.5.2). Perhaps a majority of these lecturers had limited experience in competency based assessments. Gagnon (2009) and Rojewski (2009) strongly advocate for a competent work force in TVET institutions. Competency of TVET Lecturers is crucial in that it empowers them to be able to adapt to a variety of teaching strategies which better equip TVET Learners with the skills needed in the work place especially the use of modern technology. With better resources in the technical colleges, the equipment and machinery complement the new TVET programs (BTEP). The lecturers should therefore be competent in handling such. There were however differences observed between old and new colleges. Newly built colleges had better resources compared to the old ones. With constant changes in the use of technology in the workplace, this is one area where TVET managers in the country have to ensure fair distribution and usage of these resources.

Student progression between levels in the BTEP was also noted as a concern (see section 5.5.6). Findings indicated that it takes a long time to progress to the next level within the BTEP. Even of more serious concern is the lack of clear progression pathways between different levels in the Botswana National Qualifications Framework. The prior learning of TVET Learners from Government TVET institutions who decide to further their studies in other institutions of higher learning such as the University of Botswana are usually not recognised by those institutions. This is one area which the DTVET and policy makers must look into as a matter of urgency to make TVET in Government institutions
attractive. Doing that would also begin to alter the perception of those who still perceive TVET as second class compared to academic education.

A concern about the duration of learners’ industrial attachment was also strongly emphasised (see chapter 5, sections 5.3.2; 5.4.1.3; 5.5.4). For Botswana to achieve the pillars of its Vision 2016, and DTVET vision of producing competent human resource to service Botswana, resources and exposure to workplace ethics is crucial. Although industrial attachment is part of the TVET curriculum, little attention has been given to that area. A 4-6 week work term is not adequate for learners to apply skills acquired in an institution to the workplace. Too much theory at the expense of hands on experience (as suggested in section 5.6.5) may be detrimental to the TVET system. While education and training managers formulate and review policies to address the differences in modes of TVET delivery, they should recognise the importance of working towards the key outcomes of their training mandate, especially that of global TVET. UNESCO views TVET to encompass not only the training of individuals for specific occupations but also preparation for life so that they become responsible citizens in a changing global context. Sullivan (2009) discussed how a weak global economy and unpredictable financial markets have changed workplace conditions. He stated that long-term success can be achieved through enacting training strategies that embrace the changing world of work and aligning them to their organisational objectives. Organisational objectives are set strategies that guide the organisations as they attempt to succeed in achieving their set aims.

Therefore, increasing duration of industrial attachment for TVET Learners is more likely to accord them the time to learn, master and apply training skills in a workplace setting. The range of experiences encountered during this time would support the department/Government’s initiatives of growing a pool of competent skilled workforce to drive Botswana’s economy. This will also address concerns of mismatch of training to industry demands, skill shortages and the mobility of future workforce. Technological changes, the demand for new skills in the knowledge economy will continue as the industry continues to demand highly-specialized skills and behaviours.

One of the prominent trends in TVET is that of personal choice. With Botswana TVET aiming to produce employable graduates at the end of their training, it is important that managers take into account the beliefs and value systems of such individuals. Learners
surveyed wanted are calling for more time for industrial attachment. The shift from manual workers to creative, knowledge-based workers suggests that worker performance and contribution will connect more directly to their commitment to local departmental goals and objectives. This suggests more outcome-based accountability rather than managing by time clocks and greater room for initiative on the part of the knowledge worker. Policy makers and TVET managers need to accommodate different lifestyles and work choices by creating meaningful learning cultures that balance with industry demands, while also directly linking them to productivity and performance.

Small as the industry base is in Botswana, there is need for the Government to diversify the economy to accommodate the new set of skills acquired by TVET Learners especially from Government TVET institutions. The mining industry in Botswana is saturated and therefore the Government has to devise ways of employment creation by creating opportunities for these graduates. This highlights the importance of having TVET programs that are relevant, appropriate and effective to local context thus driving towards providing a market led TVET. It would work in favour of Government initiatives in terms of recognition and elevating the status of TVET. This could also encourage and enhance close collaboration between TVET stakeholders and the Government thus making TVET more attractive.

An internship scheme for TVET graduates (with the interns receiving a wage as it is the case in Botswana) would capture data about those graduates from the system who have found employment and those who are still looking for employment. For this service, TVET graduates register with the Government and a list is captured as per their industry areas of specialisation. Placement is on first come first serve basis and as when employment opportunities arise. This could also be useful in that records could be kept to record those who have found fulltime employment from the internship program. For those who opted to venture into employment creation, another Tracer Study would assist in capturing this data to augment the above. Having this information readily available would enable policy makers and TVET managers to device strategies that would strengthen strong holds and improve those areas that need improvement.

The results of this study demonstrated the multifaceted nature of TVET and the need for addressing that complexity when policy is formulated, recommended and implemented. Therefore, a complete solution must include all the key stakeholders. Moreover, a long
term solution could be diversification of the economy to absorb TVET graduates thus addressing issues of TVET relative effectiveness in Botswana although this is a macro-economic issue of the highest order. Below is a brief discussion about suggested approaches, short term, medium term and long term in attempting to provide solutions to the current challenges faced by Botswana TVET system.

7.2.1: Short Term Measures

As the country scales up its investment in TVET coupled with the emergence of new technologies in the workplace, the need for a skilled workforce will increase thus widening the gap that is currently experienced. Based on the previous discussions, strengthening stakeholder involvement in TVET planning and implementing would bring about change in the overall effectiveness of TVET system in Botswana. Such collaboration has proven to have positive effects on TVET program design, delivery and recognition of such program by other important stakeholders. In addition, improving the training quality and environment especially in TVET institutions, may also positively change the perceptions of poor quality training in Brigades compared to Technical Colleges. Moreover, the perception of TVET as of lesser value than academic qualification may also change in the short term. As discussed earlier, TVET Learners in brigades were less positive about their training than those in technical colleges as they perceived technical colleges to have better resources for quality training. An increased perception of quality of training will improve the extent of the Botswana TVET system relative effectiveness. Moreover, issues of recognition of TVET qualifications, progression path ways, and fragmentation of the system would be addressed thus making Botswana TVET attractive.

7.2.2: Medium Term Measures

Fragmentation of the TVET system in Botswana has affected its relative effectiveness. Addressing this issue could be successful if collaboration with important stakeholders is strengthened and enhanced. TVET is an educational sector where stakeholder engagement is essential otherwise the outputs possibly don’t align with industry demand (Republic-of-Botswana, 1977, 1994). This is also true for the other sectors, but not as significant. This would see timely program reviews for the TVET programs, improvement of delivery and assessment practices. It would also look into fair allocation
of resources across all TVET institutions in the country. This would include upgrading the skills of all TVET Lecturers to cope with modern technologies inside the classroom and workshops, exposure to technology in the workplace thus improving their competency in delivery of TVET programs especially the BTEP with its competency based methodologies. This would encourage constant program reviews thus aligning them to labour market demand. Additionally, issues of progression pathways between TVET levels and the University of Botswana could be dealt with accordingly. In the discussions previously, learners complained about unclear progression pathways within the system and the University of Botswana. With the establishment of NQFs, pathways between the different levels of a National Qualifications Framework with credit transfer and recognition of previous learning were to be made possible. This would lead to a more effective and efficient interlocking of TVET and Higher Education sectors with benefits for the learners and the national economy (McGrath, 2011; S. McGrath, et al., 2006; UNESCO, 2013). So collaboration and reaching consensus with some important stakeholders could influence some decision making to benefit the system.

Successful implementation of decisions made that could benefit the system would build learner confidence in TVET courses, thus improving their perception of overall TVET effectiveness. As detailed in the discussions, the efforts that could boost learner confidence in TVET courses may include several strategies including but not limited to; constant program review; strengthening industrial attachment for learners; fair allocation of resources across TVET institutions in Botswana, training lecturers to handle competency based delivery and assessments, clearly defined progression pathways between TVET courses and other institutions of higher learning, and strengthening stakeholder consultation and involvement.

7.2.3: Long Term Measures

The two preceding sections demonstrated several measures that can be implemented to address the inconsistencies in the Botswana TVET system thus improving its relative effectiveness in both the short and medium term. However, as noted earlier, a long-term solution should address all the areas that hinder system effectiveness from a strategic perspective. An important finding of this study was that of fragmentation in the overall system. The two TVET providers in the country, Ministry of Education and Skills
Development and the Ministry of Labour and Home Affairs work in isolation hence the fragmentation. Therefore, collaboration between these two ministries in the relevant TVET policy areas may lay a strong foundation for future system relative effectiveness as intended to be achieved by the government taking over of the Brigades.

A high level macro-economic strategic measure could be that of diversifying the economy to grow the small industry base in Botswana. This would decrease the high unemployment rate of TVET graduates in Botswana especially for those from Government TVET institutions the industry base grows and diversifies thus dictating the type of skills needed in the workplace.

**7.3: Limitations of the study**

One of the limitations of the study was that the sample was limited to learners and lecturers from Government TVET institutions, employers and senior Government officials. The opinions of stakeholders from private TVET institutions were not sought. This was because of the limited resources available for the study, including funding and time. Thus, the study had to be focussed on a population that would not only be manageable but also provide adequate data that would be reliable in addressing the research questions.

This study was conducted with the researcher resident in Australia except for the data collection phase. A period of six months was allocated for field work (data collection) which involved substantial travelling for the researcher because of the geographical locations of the four colleges and sampled brigades in the country. Findings were based only on perceptions of the sample groups taking part in this study.

**7.4: Recommendations to key stakeholders**

Based on the conclusions from this study, all TVET stakeholders have a role to play in shaping the country’s TVET system’s relative effectiveness. Therefore, the following recommendations are made, requiring contributions by the key stakeholders including the Government, TVET institutions, and industry towards improving the effectiveness of the Botswana TVET system:
1) Improving TVET courses in Government TVET institutions by constantly reviewing them in accordance with industry demands. This will be enhanced by forging partnerships with the industry in view of improving the quality of training programs.

2) If the Government is to continue implementing the two TVET provisions (colleges and brigades), fair allocation of resources across all TVET institutions, and training of TVET Lecturers in competency based training and assessment is crucial. This strategy will enhance lecturers’ performance and competence in the training environment. It will also change many people’s perception towards brigades as low class institutions. In general, the overall status of TVET in Botswana may be improved.

3) Fragmentation in Botswana TVET practices may also be reduced if communication is improved between the two TVET providers. Clearly defined roles by the two ministries in effective administration and delivery of TVET programs could also improve the system relative effectiveness in that the strength of one ministry could offset the weakness of the other.

4) Clearly defined progression pathways within the Botswana National Qualifications Framework (BNQF) and between BNQF and other institutions of higher learning could also improve the status of TVET in Botswana. This would imply recognition of technical college qualification has to be recognised by institutions of higher learning if TVET graduates opt pursue other qualifications beyond Government TVET.

5) The status of TVET in Botswana may be improved if the Government formulates economic policies that promote national economic growth and diversification thus solving the problem of unemployment especially among TVET graduates. The Government must include TVET graduates in its internship scheme where the employment sector, public and private, sources their talent. At the moment TVET graduates from Government TVET institutions are not included in this program.

6) Technical college training, especially the BTEP may be improved by joint efforts between these institutions and industry by public education. Reaching out to the community about these programs and their mode of operation may change the
current perception of these programs. As discussed earlier, most stakeholders preferred norm referenced assessments compared to criterion referenced assessments.

7) Partnerships between TVET institutions and industry with the goal of designing and implementing programs that would create industry and community confidence in TVET graduates, would improve the status of TVET

8) Re-introducing the enterprise activities in the Brigades, as was implemented upon their establishment since the 1960s. Maintaining relationships with the industry and the community as was the case could sustain and even attract more stakeholders into ejecting resources to the production departments.

9) Government exploration of other measures not covered in this study but which have the potential to make TVET more attractive to users of the system hence improving its relative effectiveness are recommended. For example, forming and identifying research groups to identify among others successful models of providing different forms of TVET yet maintaining quality in all the provisions at the same time taking into account the local and social context to which those findings would be applied.

7.5: Recommendations for further studies

In view of the results obtained and the limitations in scope of this study, the following future research that may contribute to the knowledge base is recommended:

1) Since the sample of the present study was limited to only eight (8) Government TVET institutions, a further study that will increase the range of respondents to more institutions and other key stakeholders including private TVET providers may enhance better understanding of TVET effectiveness in Botswana.

2) Important information on the system relative effectiveness maybe availed by undertaking longitudinal studies of TVET graduates with a view of establishing their perception towards the system relative effectiveness and the employment prospects in general.
7.6: Final Summary

Improving the effectiveness of TVET systems has been a challenge across the globe. The important role of TVET in building capacities for both national and individuals’ economic and social development cannot be overemphasised for Botswana. There is an urgent need to address the challenges discussed above.

Generally the fragmentation of the TVET practices in Botswana is hampering the overall system effectiveness. Addressing the issue is complex and would require on-going consultation between the stakeholders especially Government and industry to reach a degree of consensus. This could include cyclic processes and phases such as used in action research. This would encompass planning for the action (identify, informing and organising the problem); the acting on the planned strategy (trialling, collecting information, investigation); developing the measured response strategy (analysing, reporting and sharing findings) and then reflecting on the findings (evaluating, implementing and re-visiting the stages again). Such a process would be a valuable approach that could improve the overall TVET system effectiveness in Botswana.
8: References


9: Appendices

Faculty of Education and Arts

Appendix A

11 April, 2013
Dear Sir/Madam

My name is Ms Lydia Ngati. I’m currently a full time PhD student at the University of Newcastle, Australia. Back in Botswana I’m a lecturer at Francistown College of Technical & Vocational Education and Training (FCTVE) with the Department of Education (Teacher Training).

I am currently engaged in a research project focusing on; The Technical and Vocational Education and Training System in Botswana: Stakeholder perceptions of TVET practices. It aims at critically analysing Botswana’s current TVET system since the implementation of the recommendations of the Revised National Policy on Education (1994). It also aims to look at the changes brought about by the inception of the National Policy on Vocational Education & Training (1997) on its attempt to provide market-led TVET. Since there is limited data and research on Botswana’s TVET system, study would attempt to identify the areas of ineffectiveness within the system leading to corrective measures and strategies to improve overall provision of TVET in Botswana.

I have embarked on data collection exercise contacting various stakeholders in Botswana. Please find attached Letter of invitation, consent forms and a questionnaire to fill in.

With these few lines, I am humbly requesting for your utmost support and cooperation so that this exercise becomes a success.

Thank You in Advance.

Yours Sincerely

Ms Lydia Ngati
PhD Candidate
MEd Stud
DTVE
BA (Hons) Fashion Design
Mobile in Australia: +61 4 15339886
c3064401@uon.edu.au; lysups2003@hotmail.com
APPENDIX B

The Technical and Vocational Education and Training System in Botswana: Stakeholder perceptions of TVET practices

Learner Questionnaire

Year of Completion____________________

College____________________

Dear Sir/Madam

The aim of this questionnaire is to evaluate the TVET system in Botswana. It is aimed at gaining further insights of your perception about the TVET system in the country. As a vocational training graduate, you are kindly requested to complete this questionnaire. It should only take a short time to complete.

The data obtained will assist with the evaluation of the vocational education system in terms of relevancy, appropriateness and contribution to the country’s cultural, social and economic development. Please be reminded that this survey is voluntary, and all returned questionnaires will remain confidential. The questionnaire consists of eight sections. These include personal information; your vocational course; program content; program resources; program instruction/evaluation methods; work term; skills acquisition, quality of training & satisfaction. Please be as honest and precise as possible when answering.

SECTION A: PERSONAL INFORMATION

Please circle the item that is most applicable to you.

1) Age
   a) 16-24
   b) 25-34
   c) 35-49
   d) 50-64
   e) 65+

2) Gender Male/Female
3) What level of training have you enrolled in at a Vocational Training Institution? If you have enrolled in different levels, please specify using more than one response

a) Higher Diploma  
b) Diploma  
c) Certificate  
d) National Craft Certificate  
e) Trade Test B  
f) Other (Please specify) __________________________

4) What is your area of specialisation?

a) Construction trades, craft, trade and industrial  
b) Commercial, clerical, business and public administration  
c) Agriculture, forestry and fisheries  
d) Information and Communications Technology (ICT)  
e) Hospitality and tourism  
f) Other (please specify) __________________________

Below are items which seek your perception in regards to the course you have enrolled in. Please tick the box which most represents your view.

Key:

SA  Strongly agree  
A  Agree  
NS  Not sure  
D  Disagree  
SD  Strongly disagree

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<th>SECTION B: Your vocational course</th>
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<td>1)</td>
<td>When you enrolled, you were provided with a course outline detailing all the learning outcomes and performance criteria for successful completion</td>
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<td>2)</td>
<td>The objectives of the program were clearly explained to you when you enrolled.</td>
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<td>3)</td>
<td>You are well informed about the learning outcomes of the different units in your course</td>
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<td>4)</td>
<td>The program description accurately described the types of duties a graduate can expect to perform in the work environment</td>
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<td>5)</td>
<td>The program length is sufficient to produce graduates with the required knowledge and skills in the work field</td>
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### SECTION C: Program content

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<td>6) The sequencing of training (i.e. order of units presented) within the program properly addresses the course requirements for successful completion</td>
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<td>7) Generally, the time allocated to each unit in your course is sufficient:</td>
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<td>8) There are units that contain learning objectives not particularly relevant to this course</td>
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<td>9) There are units of this course that need to be revised, removed or added</td>
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<td>10) There is a proper balance between theory (i.e. classroom) and practice (i.e. laboratory/ shop/ fieldwork) within the course</td>
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### SECTION D: Program Resources

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<td>11) The tools, equipment and/or supplies listed for practical components of the course (if applicable) are satisfactory for the delivery of the course</td>
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<td>12) The textbooks listed were adequate for my course (i.e. were the textbooks are current and relevant for your training)</td>
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<td>13) There was adequate learning resources (i.e. print media, audio-visual materials, etc.) provided for my course)</td>
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<td>14) The teaching instruction is reinforced with appropriate technologies (i.e. current software, hardware, etc.)</td>
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<td>15) There are specialized equipment, textbooks, software or other resources which could strengthen the delivery of this course but are not available</td>
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### SECTION E: Program instruction/ Evaluation Methods

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<td>16) The instructional materials in my course are appropriate in exposing me to workplace situations</td>
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<td>17) The course content/learning activities are consistent with industry practices</td>
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<td>18) The assessment methods for this course are appropriate (i.e. an adequate balance of theoretical and practical assessments)</td>
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<td>19) Are there any additional instructional methods that you would suggest for program delivery? Please use the space below to elaborate your answer.</td>
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SECTION F: Graduation requirements/ employment Requirements

22) The requirements for successful completion (i.e. passing grades of units, work term completion, etc.) of the course are sufficient

23) The requirement for graduates to obtain certification as a condition of employment was clearly outlined in the course outline

24) Please list the type(s) of occupational position(s) for employment which you qualify for as a result of successful completion of this course of study (i.e.: Legal Secretary, Systems Analyst, Administrator, etc.).

SECTION G: Work Term

25) The work term is appropriately placed within the course

26) The objectives of the work term are clear and sufficient

27) The length of the work term is adequate to reinforce your learning, and allow you to put what you learnt inside the classroom into real life situations

28) The assessment methods utilized for the work term are appropriate

SECTION H: Skills acquisition, quality of training satisfaction

29) My training adequately prepares me for employment

30) The quality of my training is adequate

20) Do you have recommendations for additional assessment methods which would aid in testing learner competency?

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

21) What qualifications and experience do you feel are required for lecturers to teach within this course?

____________________________________________________________________________________
____________________________________________________________________________________
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SECTION G: Work Term

Questions

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<td>20)</td>
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</table>

21) What qualifications and experience do you feel are required for lecturers to teach within this course?

____________________________________________________________________________________
____________________________________________________________________________________
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22) The requirements for successful completion (i.e. passing grades of units, work term completion, etc.) of the course are sufficient

23) The requirement for graduates to obtain certification as a condition of employment was clearly outlined in the course outline

24) Please list the type(s) of occupational position(s) for employment which you qualify for as a result of successful completion of this course of study (i.e.: Legal Secretary, Systems Analyst, Administrator, etc.).

____________________________________________________________________________________
____________________________________________________________________________________
Additional Comments

Please provide any additional comments regarding your course you feel have not been previously addressed.

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Thank you very much for your comments and the time you spent completing this questionnaire!!
APPENDIX C

The Technical and Vocational Education and Training System in Botswana: Stakeholder perceptions of TVET practices

Lecturers’ Questionnaire

Dear Sir/Madam

The aim of this questionnaire is to evaluate TVET system in Botswana. It is aimed at gaining insights of your perception about the TVET system in the country. As a lecturer, you are kindly requested to complete this survey. It should only take a short time to complete.

The data obtained will assist with the evaluation of the vocational education system in terms of relevancy, appropriateness and contribution to the country’s cultural, social and economic development. Please be reminded that this survey is voluntary, and all returned questionnaires will remain confidential. Please be as honest and precise as possible when answering.

Below are items which seek your perception in regards to the course you teaching. Please tick your response where appropriate.

Key:
SA  Strongly agree
A   Agree
NS  Not sure
D   Disagree
SD  Strongly disagree

SECTION A: TVET Curriculum

<table>
<thead>
<tr>
<th>Question</th>
<th>SA</th>
<th>A</th>
<th>NS</th>
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</thead>
<tbody>
<tr>
<td>1) When learners enrol, they are provided with a course outline including</td>
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<tr>
<td>a) entry requirements</td>
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<td>b) pre-requisites</td>
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<td>c) course content</td>
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<td>d) learning outcomes</td>
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<td>e) course duration</td>
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<td>f) textbooks/learning resources for this course (including tools, equipment and supplies for practical component of training)</td>
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<td>g) modes of assessment,</td>
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<td>h) Mode of instruction/delivery.</td>
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<td>2) The objectives of the course are clearly explained to the learners when they enrol.</td>
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<td>3) Learners are well informed about the themes of the different units in the course that they enrol in.</td>
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<td>Question</td>
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<td>4) The course description accurately defines the types of duties a</td>
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<td>graduate can expect to perform in the work environment.</td>
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<td>5) Course length is sufficient to produce graduates with the required</td>
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<td>entry-level knowledge and/or skill development in the work field.</td>
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<td>6) The overall curriculum of the course you are currently teaching is</td>
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<td>relevant to labour market demands.</td>
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</table>

**SECTION B: Course Content**

<table>
<thead>
<tr>
<th>Question</th>
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<tbody>
<tr>
<td>7) The sequencing of training (i.e. order of unit titles presented)</td>
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<td>within the course properly addresses course pre-requisites and/or co-</td>
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<td>requisites.</td>
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<td>8) Time allocated to EACH unit title is:</td>
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<td>a) excessive</td>
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<td>b) sufficient</td>
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<td>c) inadequate</td>
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<td>9) All necessary competencies/learning objectives are included within</td>
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<td>the individual unit titles of the courses.</td>
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<td>10) There are unit titles that contain learning objectives not</td>
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<td>particularly relevant to the course.</td>
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<td>11) There are areas of the curriculum (i.e. specific learning objectives)</td>
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<td>that need to be revised, removed or added to the course. Please specify,</td>
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<td>12) There is a proper balance between theory (i.e. classroom) and</td>
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<td>practice (i.e. lab/shop/fieldwork) within the course.</td>
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**SECTION C: Course Resources**

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<tr>
<td>13) The tools, equipment and/or supplies listed for practical</td>
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<td>components of the curriculum (if applicable) are satisfactory for</td>
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<td>course delivery (i.e. they support the learning objectives of the</td>
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<td>course).</td>
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<td>14) The textbooks listed are adequate for course delivery (i.e. the</td>
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<td>textbooks appear current and/or relevant for training in this field).</td>
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<td>15) There are adequate learning resources (i.e. print media, audio-</td>
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<td>visual materials, etc.) provided for course delivery and to actively</td>
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<td>engage learners.</td>
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<td>16) Instruction is reinforced with appropriate technologies (i.e. the</td>
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<td>software, hardware, etc.).</td>
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<td>17) There are specialized equipment, textbooks, software or other</td>
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<td>resources which would strengthen the delivery of this course.</td>
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</table>
### SECTION D: Course Instruction/Evaluation Methods

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<th>Question</th>
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<tbody>
<tr>
<td>18) I feel that instructional materials in my course are appropriate to expose learners to real life situations.</td>
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<td>19) I feel the course content/learning activities are consistent with industry practices.</td>
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<td>20) There are specific units within the course which require a different combination of training and experience than that held by lecturers who teach core competencies/courses.</td>
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<td>21) I feel that the assessment methods for this course are appropriate (i.e. an adequate balance of theoretical and practical assessments conducted for each course).</td>
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<tr>
<td>22) What qualifications and experience do you feel will be required for lecturers to teach core competencies/courses within this course?</td>
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<tr>
<td>23) Do you have recommendations for additional assessment methods which would ensure learner competency? Please use the space below</td>
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<tr>
<td>24) There are specific unit titles within the course that require a different combination of training and experience than that held by lecturers who teach core competencies/courses</td>
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### SECTION E: Graduation Requirements/Employment Requirements

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<tbody>
<tr>
<td>25) The requirements for successful completion (i.e. passing grades of courses, work term completion, etc.) of the course is sufficient</td>
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<tr>
<td>26) The requirement for graduates to obtain certification as a condition of employment is clearly outlined in the course outline</td>
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### SECTION F: Work Term

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<tr>
<td>27) The work term is appropriately placed within the course</td>
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<td>28) The objectives of the work term are clear and sufficient to further build on the learners’ knowledge and skill level already developed</td>
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<td>29) The length of the work term is adequate to reinforce learning, and allow learners to make practical applications of, the theoretical concepts already learned</td>
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<td>30) The assessment methods utilized for the work term are appropriate</td>
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<td>31) Please provide any additional comments regarding this course you feel have not been previously addressed.</td>
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</table>
Question | SA | A | NS | D | SD
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Employers are satisfied with the skills acquired by our graduates

32) (If Disagree or Strongly Disagree to question 31), what areas do they think could be improved?

33) Vocational courses adequately prepare graduates for the world of work.

34) (If Disagree or Strongly Disagree to question 34), what areas do you think need to be improved? (Please give a reason for your answer)

35) If you were an employer, would you employ graduates from your institution? Please elaborate.

36) Courses that we offer prepare Graduates for the Botswana job market.

37) Our graduates get employment on completion.

38) How long on average do you think your graduates wait before they get employment?

SECTION G: Experience, job satisfaction (yourself)

39) Comparing the skills you acquired from your previous training, and your ability to perform in your current, your training was very relevant
40) How often do you engage in staff development activities like workshops, seminars, short/ long term courses? Please elaborate your answer
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Please provide any additional comments regarding your course or job satisfaction you feel have not been previously addressed.
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Thank you very much for your comments and the time you spent completing this questionnaire!!
Employer Questionnaire

Dear Sir/Madam

The aim of this questionnaire is to seek stakeholder perceptions towards the TVET system in Botswana. Its purpose is to gain further insights of your perception about the TVET system in the country. As an employer, you are kindly requested to complete this survey. It should only take a short time to complete.

The data obtained will assist with the evaluation of the vocational education system in terms of relevancy, appropriateness and contribution to the country’s cultural, social and economic development. Please be reminded that this survey is voluntary, and all returned questionnaires will remain confidential. Please be as honest and precise as possible when answering.

Name of industry group/ company/ employer ________________________________

Telephone contact ________________________________

Please circle your response where appropriate

1) Do you employ vocational training Graduates?
   1) Yes
   2) No

2) (If yes), how many vocational training graduates have you employed in the last 5 years?
   1) 0 – 5
   2) 6 – 10
   3) 11 – 15
   4) 16 – 20
   5) 20 plus

3) How do you recruit Vocational Graduates?
   1) Media Advertisements
   2) Networking
   3) Recruitment Agencies
   4) Other (please specify)

4) At what level do you employ these Vocational Training graduates? Please circle all that apply
   1) Skilled level
   2) Semi – skilled level
   3) Labourers
   4) Trainees
   5) Other (please specify)
5) In what areas of specialisation do you employ Vocational Training Graduates?
   1) Construction trades, craft, trade and industrial
   2) Commercial, clerical business and public administration
   3) Agriculture, forestry and fisheries
   4) Health and health related
   5) ICT
   6) Hospitality and tourism

Below are items which seek your perception in regards to the courses offered in government TVET colleges. Please tick the box which most represents your view.

Key:

SA Strongly agree
A Agree
NS Not sure
D Disagree
SD Strongly disagree

<table>
<thead>
<tr>
<th>Question</th>
<th>SA</th>
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<tr>
<td>6) I employ graduates trained in a different field other than the primary business of my company/institution</td>
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<td>7) (If Strongly Disagree or Disagree to question 6), why? Because</td>
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<td>(Please circle the correct response)</td>
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<tr>
<td>1) We need people with relevant skills only</td>
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<td>2) We don’t want to waste time in training them in the required skills</td>
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<td>3) Other (Please specify)</td>
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<td>8) How would you rate the level of competence of vocational training graduates in performing their assigned responsibilities? (Please circle the correct response)</td>
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<td>1) High</td>
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<td>2) Fair</td>
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<td>3) Low</td>
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<td>4) Poor</td>
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Questions (please tick correct response on the right hand side column)

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<tr>
<td>9) Most of my employees graduated from programmes accredited by the Botswana Training Authority (BOTA).</td>
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<td>10) I am satisfied with the skills of my employees who graduated from Botswana Vocational Training Institutions.</td>
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<tr>
<td>Questions (please tick correct response on the right hand side column)</td>
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<tr>
<td>11) I feel vocational training graduates are trainable and adaptable</td>
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<td>12) I often send my vocational trained employees for further training to improve their skill level</td>
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<td>13) I have graduates of vocational institutions from outside Botswana</td>
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<td>14) The level of competency of graduates from outside Botswana is often higher compared to those trained in Botswana</td>
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<td>15) I provide on-job training for vocational training graduates who are not your employees</td>
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<td>16) I used to employ vocational training graduates in the past</td>
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</tbody>
</table>
17) We no longer employ vocational training graduates because
(please circle your response)
1) We don’t require their services
2) Poor skill level
3) Other (Please specify) _______________________

18) Do you have any suggestions of how TVET in Botswana can be improved?

________________________________________________________________________

________________________________________________________________________

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Any other comments?

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Thank you very much for your comments and the time you spent completing this questionnaire!!
APPENDIX E

The Technical and Vocational Education and Training System in Botswana: Stakeholder perceptions of TVET practices

Interview Protocol for Government officials

The following interview questions represent the draft schedule for use in seeking stakeholder perceptions towards TVET practices in Botswana. The government interview protocol consists of four questions, each with possible probing questions. A copy will be availed to the participants prior to the interviews.

Questions

- What is your take on the current TVET practices in the country?
  - Would you say the current practices are working for Botswana, especially in areas of employment?
  - Which aspects are working and which aren’t?
  - How can the situation be improved?

- Besides the learners and their facilitators, who else are your main stakeholders and why?
  - How were they identified?
  - What role do they play in the current running of TVET in the country?
  - How would you gauge their level participation?

- How often do you consult/engage with your main stakeholders regarding TVET practices in the country?
  - Can you briefly discuss what is always deliberated in such engagements?
  - How has this benefited [not benefited] the system?

- Who is involved in TVET curriculum and why?
  - There are mounting concerns about over dependence on foreign expertise in the running of TVET practices in the country. What’s your take on this?
  - Batswana feel there is mismatch of training to employment market. Please confirm or negate.
  - Please justify your response above.
  - How often do you send facilitators for professional development courses?
APPENDIX F.1
Tuesday 02. April 2013

Dear Principal/Coordinator

**Information Statement for the Research Project:**
The Technical and Vocational Education and Training System in Botswana: Stakeholder perceptions of TVET practices
Researchers: Dr. J. Mitchell O’Toole, Dr Barry McKnight, Ms Lydia Ngati

Your institution is invited to take part in the research project above which is being conducted by Lydia Ngati from the Department of Education at the University of Newcastle, Australia. Ms Ngati is conducting this research as part of her Doctor of Philosophy under the joint supervision of Dr J. Mitch O’Toole and Dr Barry McKnight.

**Why is the research being done?**
The purpose of this study is to seek stakeholder perceptions towards the current Botswana TVET system since the implementation of the recommendations from the Revised National Policy on Education. It also aims to look at the changes brought about by the inception of the National Policy on Vocational Education and Training on its attempt to provide market-led TVET. Since there is scarce data and research on Botswana’s TVET system, this study would assist in identifying the areas of ineffectiveness within the system and strategies to improve overall provision of TVET in Botswana.

**Who can participate?**
As the principal/coordinator, you are humbly asked to distribute the invitation to eligible lecturers and learners on behalf of the researcher. These participants would be asked to complete a questionnaire.

**What choice do you have?**
Participation in this research is entirely voluntary. Only those people who give their informed consent will be included in the project. Whether or not they decide to participate, their decision will not disadvantage them. If they do decide to participate, they may withdraw from the project at any time without giving a reason and have the option of withdrawing any data which identifies them.

**What would you be asked to do?**
Your institution is invited to participate in a survey taking up to approximately 20 minutes. If you consent to participate, you will be asked to distribute surveys allowing lecturers and learners to participate.

**What are the risks and benefits of participating?**
There are no benefits or risks in participating. The data collected in the surveys will be used by the researcher for research purposes only.

The data collected would assist in identifying the areas of ineffectiveness within the system and strategies to improve overall provision of TVET in Botswana. The findings of this study will contribute to the on-going national debate in Botswana about TVET policies and their effectiveness in contributing to national economic and social development goals.
How much time will it take?
Surveys will be delivered to your institution a week after the information letters and signed consent forms have been collected from all the participants in your institution.

How will your privacy be protected?
The researchers will maintain confidentiality of the personal information provided. Responses will be coded for data analysis. Materials developed through participants responses will be kept in a secure filing cabinet. Any reporting of the study will not identify individual participants. In accordance with the University of Newcastle research policy, as this research is part of a Doctor of Philosophy thesis, the original recordings need to be retained until the thesis is accepted. The collected data will be stored for a minimum of five years (as per the University of Newcastle policy).

How will the information collected be used?
The information will be analysed and reported in a thesis to be submitted for Ms Ngati’s Doctor of Philosophy. Data analysis and findings may be published in future journals and papers presented at conferences. Individual participants or departments will not be identified in any reports arising from the study.

Participants can request a summary of the results of the research by emailing the researcher.

What do you need to do to participate?
Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, contact the researcher. If you would like to participate in this study, please complete and sign the consent form attached to this information statement. This will be taken as your informed consent to participate.

Further information
If you would like further information please contact Dr Mitchell O’Toole by telephone at +61 2 4921 7822, or by email Mitch.OToole@newcastle.edu.au or Lydi Ngati telephone +267 72554945 (Or in Australia, +61 415339886) or by email c3064401@uon.edu.au

Thank you for considering this invitation. Regards,

Dr. J.M. O’Toole
Senior Lecturer
Department of Education
T +61 2 4921 7822
mitch.otoole@newcastle.edu.au

Dr Barry McKnight
Conjoint Senior Lecturer
Department of Education
T+61 2 4921 7822
barry.mcknight@newcastle.edu.au

Ms Lydia Ngati
Student Researcher
Department of Education
T+61 2 4921 5000
c3064401@uon.edu.au

Complaints about this research
Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to The Permanent Secretary, Ministry of Education & Skills Development, Private Bag 005, Gaborone, Botswana, Tel: 267 3655 400.
APPENDIX F.2

Monday 20, April 2012

Dear TVET Learner


Researchers: Dr. J. Mitch O’Toole, Dr Barry McKnight, Lydia Ngati

As the TVET graduate, you are invited to take part in the research project above which is being conducted by Lydia Ngati from the School of Education at the University of Newcastle, Australia. Ms Ngati is conducting this research as part of her Doctor of Philosophy under the joint supervision of Dr J. Mitch O’Toole and Dr Barry McKnight.

Why is the research being done?
The purpose of this study is to seek stakeholder perceptions towards the current Botswana TVET system since the implementation of the recommendations from the Revised National Policy on Education. It also aims to look at the changes brought about by the inception of the National Policy on Vocational Education and Training on its attempt to provide market-led TVET. Since there is scarce data and research on Botswana’s TVET system, suggestions from the literature would assist in identifying the areas of ineffectiveness within the system leading to corrective measures and strategies to improve overall provision of TVET in Botswana.

Who can participate?
The college principals, facilitators and students are invited to complete a short survey (taking approximately 15 minutes to complete).

What choice do you have?
Participation in this research is entirely your choice. Only those people who give their informed consent will be included in the project. Whether or not you decide to participate, your decision will not disadvantage you. If you do decide to participate, you may withdraw from the project at any time without giving a reason and have the option of withdrawing any data which identifies you. It is not possible however to withdraw a completed anonymous survey once it has been submitted.

What would you be asked to do?
If you agree to participate, you will be asked to complete an anonymous short survey taking approximately 15 minutes to complete. Consent will be sought from you to participate.

How much time will it take?
The surveys will be delivered to your college a week after the information letters and signed consent forms have been collected from all the participants in your college. The survey should take about 15 minutes to complete. Drop boxes will be collected a week after the deadline of all completed surveys in your college.
How will your privacy be protected?
Participant responses to the survey will be anonymous. Responses will be coded for data analysis. Materials developed through participants responses will be kept in a secure filing cabinet. Any reporting of the study will not identify individual participants. In accordance with the University of Newcastle research policy, as this research is part of a Doctor of Philosophy thesis, the original recordings need to be retained until the thesis is accepted, after which original recordings will be destroyed.

How will the information collected be used?
The information will be analysed and reported in a thesis to be submitted for Ms Ngati’s Doctor of Philosophy. Data analysis and findings may be published in future journals and papers presented at conferences. Individual participants or colleges will not be identified in any reports arising from the study.

What do you need to do to participate?
Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, contact the researcher.

If you would like to participate in this study, please complete and return the attached anonymous survey to the sealed box located in front of your classroom. This will be taken as your informed consent to participate.

Further information
If you would like further information please contact Dr Mitch O’Toole by telephone at +61 2 4921 7822, or by email Mitch.OToole@newcastle.edu.au or Lydi Ngati telephone +267 72554945 (Or in Australia, +61 415339886) or by email c3064401@uon.edu.au

Thank you for considering this invitation.
Regards,

Dr. J.M. O’Toole
Senior Lecturer
School of Education T +61 2 4921 7822
mitch.otoole@newcastle.edu.au

Dr Barry McKnight
Conjoint Senior Lecturer
School of Education T+61 2 4921 7822
barry.mcknight@newcastle.edu.au

Lydia Ngati
Student Researcher
School of Education T+61 2 4921 5000
c3064401@uon.edu.au

Complaints about this research
Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to The Permanent Secretary, Ministry of Education & Skills Development, Private Bag 005, Gaborone, Botswana, Tel: 267 3655 400
APPENDIX F.3

Monday 20, April 2012
TVET Lecturer

Dear TVET Lecturer


Researchers: Dr. J. Mitch O’Toole, Dr Barry McKnight, Lydia Ngati

As a TVET facilitator, you are invited to take part in the research project above which is being conducted by Lydia Ngati from the College of Education at the University of Newcastle, Australia. Ms Ngati is conducting this research as part of her Doctor of Philosophy under the joint supervision of Dr J. Mitch O’Toole and Dr Barry McKnight.

Why is the research being done?
The purpose of this study is to seek stakeholder perceptions towards Botswana’s current TVET system since the implementation of the recommendations from the Revised National Policy on Education. It also aims to look at the changes brought about by the inception of the National Policy on Vocational Education and Training on its attempt to provide market-led TVET. Since there is scarce data and research on Botswana’s TVET system, suggestions from the literature would assist in identifying the areas of ineffectiveness within the system leading to corrective measures and strategies to improve overall provision of TVET in Botswana.

Who can participate?
The college principal, facilitators and students are invited to complete a short survey (taking approximately 15 minutes to complete). As facilitators of TVET programs in the country, you are also invited to participate in a 20 minutes semi-structured interview.

What choice do you have?
Participation in this research is entirely your choice. Only those people who give their informed consent will be included in the project. Whether or not you decide to participate, your decision will not disadvantage you. If you do decide to participate, you may withdraw from the project at any time without giving a reason and have the option of withdrawing any data which identifies you. It is not possible however to withdraw a completed anonymous survey once it has been submitted.

What would you be asked to do?
If you agree to participate, you will be asked to complete an anonymous short survey taking approximately 15 minutes to complete and participate in one interview taking up to approximately 20 minutes. Consent will be sought to audio-tape the interview.

You will be able to review the recording and transcripts to edit or erase any part of your contribution. If you choose to complete the survey, you are not obliged to participate in an interview. Where consent is given and during the visits to your college Ms Ngati will be making notes that provide her with insights into the culture and context of TVET practices onsite.
How much time will it take?
The surveys will be delivered to your college a week after the information letters and signed consent forms have been collected from all the participants in your college. The survey should take about 15 minutes to complete. Drop boxes will be collected a week after the deadline of all completed surveys in your college.

How will your privacy be protected?
Participant responses to the survey will be anonymous. The researchers will maintain confidentiality of the personal information provided during the interviews and field records. Responses will be coded for data analysis. Materials developed through participants responses will be kept in a secure filing cabinet. Any reporting of the study will not identify individual participants. In accordance with the University of Newcastle research policy, as this research is part of a Doctor of Philosophy thesis, the original recordings need to be retained until the thesis is accepted, after which original recordings will be destroyed.

How will the information collected be used?
The information will be analysed and reported in a thesis to be submitted for Ms Ngati’s Doctor of Philosophy. Data analysis and findings may be published in future journals and papers presented at conferences. Individual participants or colleges will not be identified in any reports arising from the study.

What do you need to do to participate?
Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, contact the researcher.
If you would like to participate in this study, please complete and return the attached anonymous survey to the sealed box located in the staff room. This will be taken as your informed consent to participate.
Principals and some facilitators are also invited to participate in an interview. If you would participate in an interview, please complete the consent form attached to the information statement to be collected from the reception desk. Ms Ngati will then contact you to arrange a time convenient to you for the interview.

Further information
If you would like further information please contact Dr Mitch O'Toole by telephone at +61 2 4921 7822, or by email Mitch.OToole@newcastle.edu.au or Lydi Ngati telephone +267 72554945 (Or in Australia, +61 415339886) or by email c3064401@uon.edu.au

Thank you for considering this invitation.

Regards,

Dr. J.M. O'Toole  
Senior Lecturer  
College of Education  
T +61 2 4921 7822
mitch.otole@newcastle.edu.au

Dr Barry McKnight  
Conjoint Senior Lecturer  
College of Education  
T+61 2 4921 7822
barry.mcknight@newcastle.edu.au

Lydia Ngati  
Student Researcher  
College of Education  
T+61 2 4921 5000
c3064401@uon.edu.au

Complaints about this research
Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to The Permanent Secretary, Ministry of Education & Skills Development, Private Bag 005, Gaborone, Botswana, Tel: 267 3655 400
APPENDIX F.4

10, April 2013
The Employers

Dear Stakeholders
(Employers)

Information Statement for the Research Project:

The Technical and Vocational Education and Training System in Botswana:
Stakeholder perceptions of TVET practices

Researchers: Dr. J. Mitchell O’Toole, Dr Barry McKnight, Ms Lydia Ngati

As stakeholders in TVET, you are invited to take part in the research project above which is being conducted by Lydia Ngati from the School of Education at the University of Newcastle, Australia. Ms Ngati is conducting this research as part of her Doctor of Philosophy under the joint supervision of Dr J. Mitch O’Toole and Dr Barry McKnight.

Why is the research being done?
The purpose of this study is to seek stakeholder perceptions towards the current Botswana TVET system since the implementation of the recommendations from the Revised National Policy on Education. It also aims to look at the changes brought about by the inception of the National Policy on Vocational Education and Training on its attempt to provide market-led TVET. Since there is scarce data and research on Botswana’s TVET system, the study would assist in identifying the areas of ineffectiveness within the system and strategies to improve overall provision of TVET in Botswana.

Who can participate?
Employers in the sector are invited to complete a short survey (taking approximately 15 minutes to complete).

What choice do you have?
Participation in this research is entirely your choice. Only those people who give their informed consent will be included in the project. If you do decide to participate, you may withdraw from the project at any time without giving a reason and have the option of withdrawing any data which identifies you. It is not possible however to withdraw a completed anonymous survey once it has been submitted.

What would you be asked to do?
If you agree to participate, you will be asked to complete an anonymous short survey taking approximately 15 minutes. Consent to participate will be sought from you.

What are the risks and benefits of participating?
There are no benefits or risks in participating. The data collected in the surveys will be used by the researcher for research purposes only.

The data collected would assist in identifying the areas of ineffectiveness within the system and strategies to improve overall provision of TVET in Botswana. The findings of this study will contribute to the on-going national debate in Botswana about TVET policies and their effectiveness in contributing to national economic and social development goals.
How much time will it take?
The surveys will be e-mailed to you alongside the information letters and consent forms. The survey should take about 15 minutes to complete.

How will your privacy be protected?
Participant responses to the survey will be anonymous. Responses will be coded for data analysis. Materials developed through participants responses will be kept in a secure filing cabinet. Any reporting of the study will not identify individual participants. In accordance with the University of Newcastle research policy, as this research is part of a Doctor of Philosophy thesis, the original recordings need to be retained until the thesis is accepted. The collected data will be stored for a minimum of five years (as per the University of Newcastle policy).

How will the information collected be used?
The information will be analysed and reported in a thesis to be submitted for Ms Ngati’s Doctor of Philosophy. Data analysis and findings may be published in future journals and papers presented at conferences. Individual participants or organisations will not be identified in any reports arising from the study.

What do you need to do to participate?
Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, contact the researcher.

If you would like to participate in this study, please complete and return the attached anonymous survey to the email; c3064401@uon.edu.au or lysups2003@hotmail.com. This will be taken as your informed consent to participate.

Further information
If you would like further information please contact Dr Mitch O’Toole by telephone at +61 2 4921 7822, or by email Mitch.OToole@newcastle.edu.au or Lydia Ngati telephone +61 415339886 or by email c3064401@uon.edu.au

Thank you for considering this invitation.

Regards,

Dr. J.M. O’Toole
Senior Lecturer
School of Education
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mitch.otoole@newcastle.edu.au

Dr Barry McKnight
Co-Joint Lecturer
School of Education
T+61 2 4921 7822
barry.mcknight@newcastle.edu.au

Ms Lydia Ngati
Student Researcher
School of Education
T+61 2 4921 5000
c3064401@uon.edu.au

Complaints about this research
Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to The Permanent Secretary, Ministry of Education & Skills Development, Private Bag 005, Gaborone, Botswana, Tel:+ 267 3655 400.
APPENDIX F.5

Monday 20, April 2012

Dear Officer


Researchers: Dr. J. Mitch O’Toole, Dr Barry McKnight, Lydia Ngati

As the government official, you are invited to take part in the research project above which is being conducted by Lydia Ngati from the Department of Education at the University of Newcastle, Australia. Ms Ngati is conducting this research as part of her Doctor of Philosophy under the joint supervision of Dr J. Mitch O’Toole and Dr Barry McKnight.

Why is the research being done?
The purpose of this study is to seek stakeholder perceptions towards the current Botswana TVET system since the implementation of the recommendations from the Revised National Policy on Education. It also aims to look at the changes brought about by the inception of the National Policy on Vocational Education and Training on its attempt to provide market-led TVET. Since there is scarce data and research on Botswana’s TVET system, suggestions from the literature would assist in identifying the areas of ineffectiveness within the system leading to corrective measures and strategies to improve overall provision of TVET in Botswana.

Who can participate?
Government officials are invited to participate in a 20 minutes semi-structured interview.

What choice do you have?
Participation in this research is entirely your choice. Only those people who give their informed consent will be included in the project. Whether or not you decide to participate, your decision will not disadvantage you. If you do decide to participate, you may withdraw from the project at any time without giving a reason and have the option of withdrawing any data which identifies you. It is not possible however to withdraw a once the interview has been finished.

What would you be asked to do?
If you agree to participate, you will be asked to participate in one interview taking up to approximately 20 minutes. Consent will be sought to audio-tape the interview.

You will be able to review the recording and transcripts to edit or erase any part of your contribution. Where consent is given and during the visits to your department Ms Ngati will be making notes that provide her with insights into the culture and context of TVET practices onsite. Where managers consent to provide documents such as department policies and procedures developed in relation to TVET practices, she will also make notes from such in your departments.
How much time will it take?
Interviews will be conducted in your department a week after the information letters and signed consent forms have been collected from all the participants in your department.

How will your privacy be protected?
The researchers will maintain confidentiality of the personal information provided during the interviews and field records. Responses will be coded for data analysis. Materials developed through participants responses will be kept in a secure filing cabinet. Any reporting of the study will not identify individual participants. In accordance with the University of Newcastle research policy, as this research is part of a Doctor of Philosophy thesis, the original recordings need to be retained until the thesis is accepted, after which original recordings will be destroyed.

How will the information collected be used?
The information will be analysed and reported in a thesis to be submitted for Ms Ngati’s Doctor of Philosophy. Data analysis and findings may be published in future journals and papers presented at conferences. Individual participants or departments will not be identified in any reports arising from the study.

What do you need to do to participate?
Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, contact the researcher. If you would like to participate in this study, please complete and sign the consent form attached to this information statement. This will be taken as your informed consent to participate.

Some senior officials are also invited to participate in an interview. If you would participate in an interview, please complete the consent form attached to the information statement and it will be collected from the reception desk soon. Ms Ngati will then contact you to arrange a time convenient to you for the interview.

Further Information
If you would like further information please contact Dr Mitch O’Toole by telephone at +61 2 4921 7822, or by email Mitch.OToole@newcastle.edu.au or Lydi Ngati telephone +267 72554945 (Or in Australia, +61 415339886) or by email c3064401@uon.edu.au

Thank you for considering this invitation.

Regards,

Dr. J.M. O'Toole
Senior Lecturer
Department of Education
T +61 2 4921 7822
mitch.toole@newcastle.edu.au

Dr Barry McKnight
Conjoint Senior Lecturer
Department of Education
T+61 2 4921 7822
barry.mcknight@newcastle.edu.au

Lydia Ngati
Student Researcher
Department of Education
T+61 2 4921 5000
c3064401@uon.edu.au

Complaints about this research
Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to The Permanent Secretary, Ministry of Education & Skills Development, Private Bag 005, Gaborone, Botswana, Tel: 267 3655 400.
Dear Principal/Coordinator

The Research Project:
The Technical and Vocational Education and Training System in Botswana: Stakeholder perceptions of TVET practices

Departmental Participation consent to take part in the study

My institution agrees to participate in the above research project and give consent freely. I understand that the project will be conducted as described in the Information Statement, a copy of which I have retained. I understand my institution can withdraw from the project at any time and do not have to give any reason for withdrawing.

I consent to
- Be involved in distributing surveys
- Allow interested staff and students to participate;
- give documentation that may be useful to the study

I understand that sensitive information will remain confidential to the researchers. I have had the opportunity to have questions answered to my satisfaction.

College: ______________________________________________
Principal/Coordinator’s Name: ______________________________
Signature: ______________________________
Date: _________________________
APPENDIX G.2

Tuesday 02, 2013

TVET learners

The Research Project:
The Technical and Vocational Education and Training System in Botswana:
Stakeholder perceptions of TVET practices

TVET learner consent to take part in the study

I agree to participate in the above research project and give my consent freely. I understand that the project will be conducted as described in the Information Statement, a copy of which I have retained. I understand I can withdraw from the project at any time and do not have to give any reason for withdrawing.

- I consent to completing a questionnaire;

I understand that my personal information will remain confidential to the researchers. I have had the opportunity to have questions answered to my satisfaction.

College: ____________________________________________
Name: _____________________________________________

Signature: _________________________________________
Date: _____________________________________________
APPENDIX G.3

Tuesday 02, April 2013

TVET Lecturers

The Research Project:
The Technical and Vocational Education and Training System in Botswana: Stakeholder perceptions of TVET practices

TVET Lecturer’s consent to take part in the study

I agree to participate in the above research project and give my consent freely. I understand that the project will be conducted as described in the Information Statement, a copy of which I have retained. I understand I can withdraw from the project at any time and do not have to give any reason for withdrawing.

- I consent to completing a questionnaire;

I understand that my personal information will remain confidential to the researchers. I have had the opportunity to have questions answered to my satisfaction.

College: __________________________________________

Lecturer’s Name: __________________________

Signature: _________________________________

Date: _________________________________
APPENDIX G.4

10, April 2013

Stakeholders (Employers)

**The Research Project:**
*The Technical and Vocational Education and Training System in Botswana: Stakeholder perceptions of TVET practices*

**Employers’ consent to take part in the study**

I agree to participate in the above research project and give my consent freely. I understand that the project will be conducted as described in the Information Statement, a copy of which I have retained. I understand I can withdraw from the project at any time and do not have to give any reason for withdrawing.

- I consent to completing a questionnaire;

I understand that my personal information will remain confidential to the researchers. I have had the opportunity to have questions answered to my satisfaction.

Organisation:____________________________________________________

Stakeholders/Employer’s Name:____________________________

Signature: ________________________________________________

Date: _____________________________________________________
APPENDIX G.5

Monday 20, April 2012

Officer

The Research Project: The Technical and Vocational Education and Training System in Botswana: Stakeholder perceptions of TVET practices

Government officials’ consent to take part in the study
I agree to participate in the above research project and give my consent freely. I understand that the project will be conducted as described in the Information Statement, a copy of which I have retained. I understand I can withdraw from the project at any time and do not have to give any reason for withdrawing.

I consent to:

- participating in an interview and having it recorded;

I understand that my personal information will remain confidential to the researchers. I have had the opportunity to have questions answered to my satisfaction.

Department: _____________________________

Official’s Name: _____________________________

Signature: _____________________________

Date: _____________________________
### APPENDIX H

Comparison of responses from TVET institutions

<table>
<thead>
<tr>
<th>Survey section</th>
<th>Items</th>
<th>TVET institution</th>
<th>SD</th>
<th>D</th>
<th>NS</th>
<th>A</th>
<th>SA</th>
<th>Total</th>
<th>Grand Total</th>
<th>P value</th>
</tr>
</thead>
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<td><strong>Your vocational course</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Item 5</td>
<td></td>
<td>Tech Colleges</td>
<td>2(1.1%)</td>
<td>5(2.8%)</td>
<td>3(1.7%)</td>
<td>71(40.1%)</td>
<td>96(54.2%)</td>
<td>177</td>
<td>309</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brigades</td>
<td>23(17.4%)</td>
<td>25(18.9%)</td>
<td>14(10.6%)</td>
<td>60(45.5%)</td>
<td>10(7.6%)</td>
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<td></td>
</tr>
<tr>
<td>Item 6</td>
<td></td>
<td>Tech Colleges</td>
<td>4(2.3%)</td>
<td>16(9%)</td>
<td>14(7.9%)</td>
<td>80(45.2%)</td>
<td>63(35.6%)</td>
<td>177</td>
<td>313</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brigades</td>
<td>16(11.8%)</td>
<td>19(14%)</td>
<td>11(8.1%)</td>
<td>66(48.5%)</td>
<td>24(17.6%)</td>
<td>136</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 7</td>
<td></td>
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The above table summarises learners’ responses from two TVET provisions in Botswana (technical colleges and brigades). It is apparent from the Table that there are different perceptions towards the overall TVET provision in Botswana. That is, learners from brigades are less positive about their programs compared to their counterparts in technical colleges.